

Polypeptide	Amino acid sequence					SEQ ID NO:
Z _{wt}	VDNKFNKEQQ	NAFYEIILHP	NLNEEQRNAF	IQSLKDDPSQ	SANLLAEAKK	1
Z _{HER2} A	VDNKFNKELR	QAYWEIQALP	NLNWTQSRAF	IRSLYDDPSQ	SANLLAEAKK	2
Z _{HER2} B	VDNKFNKEPK	TAYWEIVKLP	NLNPEQRRAF	IRSLYDDPSQ	SANLLAEAKK	3
Z _{HER2} C	VDNKFNKEPR	EAYWEIQRLP	NLNNKQKAAF	IRSLYDDPSQ	SANLLAEAKK	4
Z _{HER2} D	VDNKFNKEWV	QAGSEIYNLP	NLNRAQMRAF	IRSLSDDDPSQ	SANLLAEAKK	5
Z _{HER2} :101	VDNKFNKEMR	HAYWEIVKLP	NLNPRQKRAF	IRSLYDDPSQ	SANLLAEAKK	6
Z _{HER2} :102	VDNKFNKEMR	KAYWEIVLLP	NLNRRQSRAF	IRSLYDDPSQ	SANLLAEAKK	7
Z _{HER2} :103	VDNKFNKEMR	HAYWEIATLP	NLNNVQKRAF	IRSLYDDPSQ	SANLLAEAKK	8
Z _{HER2} :104	VDNKFNKEFR	TAYWEIVLLP	NLNPQQIRAF	IRSLYDDPSQ	SANLLAEAKK	9
Z _{HER2} :105	VDNKFNKELR	TAYWEIVLLP	NLNTWQIRAF	IRSLYDDPSQ	SANLLAEAKK	10
Z _{HER2} :106	VDNKFNKEPR	KAYWEIAVLP	NLNPQKRAF	IRSLYDDPSQ	SANLLAEAKK	11
Z _{HER2} :107	VDNKFNKEMR	NAYWEIALLP	NLNNQQKRAF	IRSLYDDPSQ	SANLLAEAKK	12
Z _{HER2} :108	VDNKFNKELR	TAYWEIVGLP	NLNHFQVRAF	IRSLYDDPSQ	SANLLAEAKK	13
Z _{HER2} :109	VDNKFNKEIR	TAYWEIVLLP	NLNRWQIRAF	IRSLYDDPSQ	SANLLAEAKK	14
Z _{HER2} :110	VDNKFNKEFR	KAYWEIVVLP	NLNRWQIRAF	IRSLYDDPSQ	SANLLAEAKK	15
Z _{HER2} :112	VDNKFNKEFR	TAYWEIVLLP	NLNREQGRAF	IRSLYDDPSQ	SANLLAEAKK	16
Z _{HER2} :113	VDNKFNKEMR	TAYWEIATLP	NLNNKQIRAF	IRSLYDDPSQ	SANLLAEAKK	17
Z _{HER2} :114	VDNKFNKEFR	NAYWEIVVLP	NLNNRQKRAF	IRSLYDDPSQ	SANLLAEAKK	18
Z _{HER2} :115	VDNKFNKEFR	NAYWEIAKLP	NLNNGQKRAF	IRSLYDDPSQ	SANLLAEAKK	19
Z _{HER2} :116	VDNKFNKEFR	QAYWEIALLP	NLNHSQTRAF	IRSLYDDPSQ	SANLLAEAKK	20
Z _{HER2} :118	VDNKFNKEPR	HAYWEIVKLP	NLNSLQKRAF	IRSLYDDPSQ	SANLLAEAKK	21
Z _{HER2} :120	VDNKFNKELR	TAYWEIVGLP	NLNSRQSRAF	IRSLYDDPSQ	SANLLAEAKK	22
Z _{HER2} :121	VDNKFNKELR	TAYWEIAGLP	NLNPQKRAF	IRSLYDDPSQ	SANLLAEAKK	23
Z _{HER2} :122	VDNKFNKEMR	KAYWEITQLP	NLNTROTRAF	IRSLYDDPSQ	SANLLAEAKK	24
Z _{HER2} :123	VDNKFNKEFR	KAYWEIVLLP	NLNWEQNRAF	IRSLYDDPSQ	SANLLAEAKK	25
Z _{HER2} :124	VDNKFNKEFR	KAYWEITQLP	NLNREQNRAF	IRSLYDDPSQ	SANLLAEAKK	26
Z _{HER2} :125	VDNKFNKEMR	HAYWEIATLP	NLNTNQSRAF	IRSLYDDPSQ	SANLLAEAKK	27
Z _{HER2} :126	VDNKFNKEMR	NAYWEIVGLP	NLNRWQSRAF	IRSLYDDPSQ	SANLLAEAKK	28
Z _{HER2} :127	VDNKFNKEMR	NAYWEIVGLP	NLNRWQSRAF	IRSLYDDPSQ	SANLLAEAKK	29

FIGURE 1

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Polypeptide	Amino acid sequence					SEQ ID NO:	
Z _{HER2} :129	VDNKFNKELR	NAYWEIVKLP	NLNPWQHRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	30
Z _{HER2} :130	VDNKFNKEFR	TAYWEIVKLP	NLNVRSQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	31
Z _{HER2} :133	VDNKFNKENR	TAYWEIVKLP	NLNDYQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	32
Z _{HER2} :135	VDNKFNKEFR	TAYWEITQLP	NLNLQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	33
Z _{HER2} :137	VDNKFNKEIR	TAYWEIAGLP	NLNAQKQRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	34
Z _{HER2} :138	VDNKFNKEMR	QAYWEIVRLP	NLNAQKQRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	35
Z _{HER2} :139	VDNKFNKEMR	NAYWEIVTLP	NLNTQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	36
Z _{HER2} :140	VDNKFNKEMR	QAYWEIVKLP	NLNPQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	37
Z _{HER2} :148	VDNKFNKEMR	TAYWEIALLP	NLNNMQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	38
Z _{HER2} :153	VDNKFNKEFR	KAYWEIALLP	NLNNQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	39
Z _{HER2} :158	VDNKFNKEMR	KAYWEIALLP	NLNRWQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	40
Z _{HER2} :159	VDNKFNKEMR	QAYWEIVLLP	NLNRWQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	41
Z _{HER2} :162	VDNKFNKELR	KAYWEIVGLP	NLNRQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	42
Z _{HER2} :165	VDNKFNKEMR	TAYWEIVGLP	NLNNQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	43
Z _{HER2} :167	VDNKFNKELR	TAYWEIVRLP	NLNVNQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	44
Z _{HER2} :168	VDNKFNKEFR	HAYWEIVRLP	NLNAQKHRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	45
Z _{HER2} :169	VDNKFNKELR	KAYWEIVTLP	NLNPQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	46
Z _{HER2} :170	VDNKFNKEMR	TAYWEIAKLP	NLNPQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	47
Z _{HER2} :171	VDNKFNKELR	TAYWEIVTLP	NLNTSQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	48
Z _{HER2} :172	VDNKFNKELR	KAYWEIQVLP	NLNVRSQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	49
Z _{HER2} :177	VDNKFNKEPR	QAYWEIVLLP	NLNRQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	50
Z _{HER2} :178	VDNKFNKEMR	NAYWEIVGLP	NLNRQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	51
Z _{HER2} :178	VDNKFNKEPR	QAYWEIVKLP	NLNNQSRRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	52
Z _{HER2} :179	VDNKFNKENR	TAYWEIVRLP	NLNSAQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	53
Z _{HER2} :180	VDNKFNKEMR	NAYWEIVLLP	NLNRWQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	54
Z _{HER2} :205	VDNKFNKEMR	TAYWEIVILP	NLNRWQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	55
Z _{HER2} :207	VDNKFNKEMR	TAYWEIALLP	NLNVAQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	56
Z _{HER2} :209	VDNKFNKEMR	QAYWEIVKLP	NLNSGQHRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	57
Z _{HER2} :222	VDNKFNKEFR	TAYWEIVKLP	NLNTAQNRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	58
Z _{HER2} :223	VDNKFNKEMR	TAYWEIVSLP	NLNRNQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	59
Z _{HER2} :225	VDNKFNKEMR	NAYWEIVKLP	NLNPQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	60
Z _{HER2} :226	VDNKFNKEMR	NAYWEIVKLP	NLNPQSRF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	60

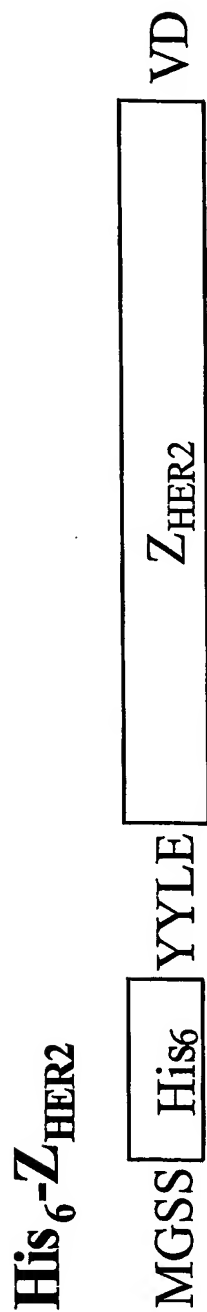
FIGURE 1

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Polypeptide	Amino acid sequence					SEQ ID NO:	
Z _{HER2} :227	VDNKENKEMR	QAYWEIALLP	NLNRWQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	61
Z _{HER2} :229	VDNKENKEFR	TAYWEIAVLP	NLNNQOKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	62
Z _{HER2} :230	VDNKENKECR	TAYWEIVKLP	NLNNAQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	63
Z _{HER2} :232	VDNKENKEPK	TAYWEIVVLP	NLNSKQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	64
Z _{HER2} :233	VDNKENKEMR	NAYWEIVTLP	NLNKWQIRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	65
Z _{HER2} :234	VDNKENKEMR	KAYWEIATLP	NLNKSQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	66
Z _{HER2} :235	VDNKENKEFR	TAYWEIVTLP	NLNVGQTRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	67
Z _{HER2} :236	VDNKENKELR	TAYWEIVGLP	NLNTROSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	68
Z _{HER2} :237	VDNKENKELR	HAYWEIVQLP	NLNREQGRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	69
Z _{HER2} :239	VDNKENKEFR	HAYWEIILKP	NLNGKQHRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	70
Z _{HER2} :240	VDNKENKEMR	TAYWEIVSLP	NLNTLQSRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	71
Z _{HER2} :261	VDNKENKEMR	KAYWEIQGLP	NLNNRQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	72
Z _{HER2} :264	VDNKENKEMR	NAYWEIAKLP	NLNREQKRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	73
Z _{HER2} :265	VDNKENKEMR	HAYWEIVGLP	NLNMIQQRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	74
Z _{HER2} :271	VDNKENKELR	NAYWEIVKLP	NLNRAQNRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	75
Z _{HER2} :278	VDNKENKELR	TAYWEIILKP	NLNNYQRRAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	76
Z _{HER2} :0024*	VDNKENKEPR	EAYWEIQRLP	NLNNKQKTAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	77
Z _{HER2} :0434	VDNKENKEMY	AAYWEIIDLP	NLNTPIQHAF	IRSLYDDPSQ	SANLLAEAKK	LNDQAQPK	78
Z _{HER2} :3053	VDNKENKETR	SAYWEIVNLP	NLNQGQQRHAF	IKSLYDDPSQ	SANLLAEAKK	LNDQAQPK	79

FIGURE 1

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**FIGURE 2**

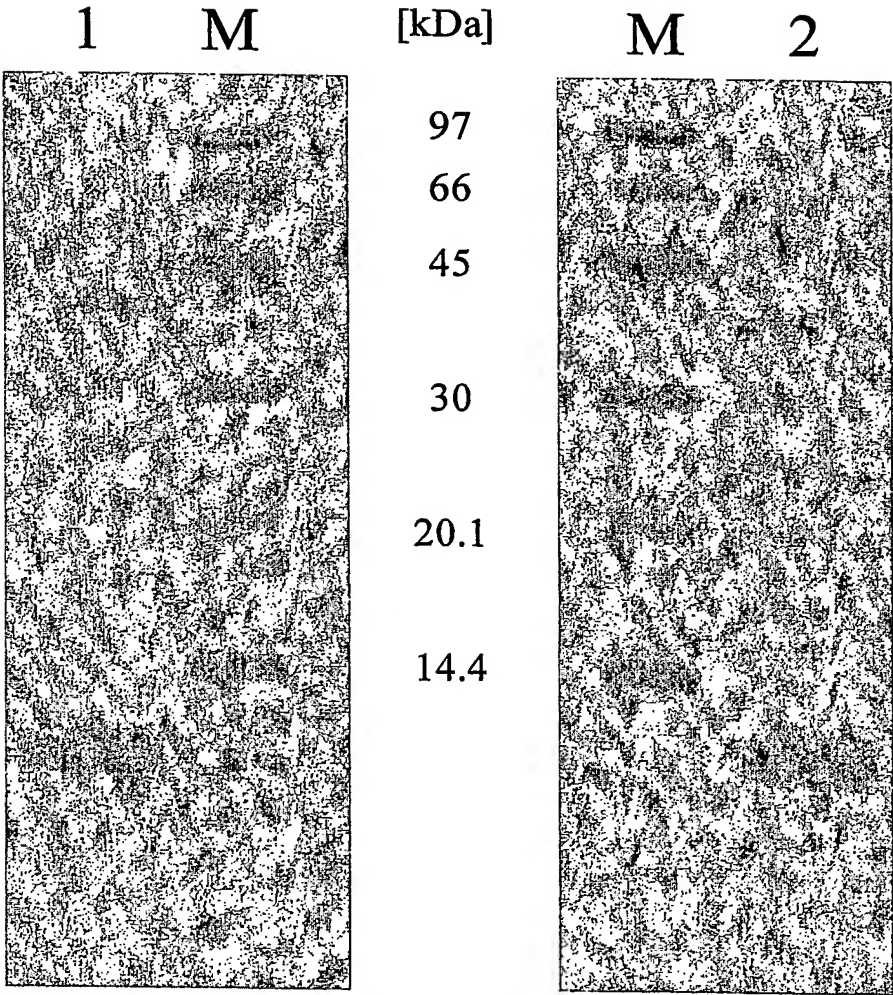


FIGURE 3

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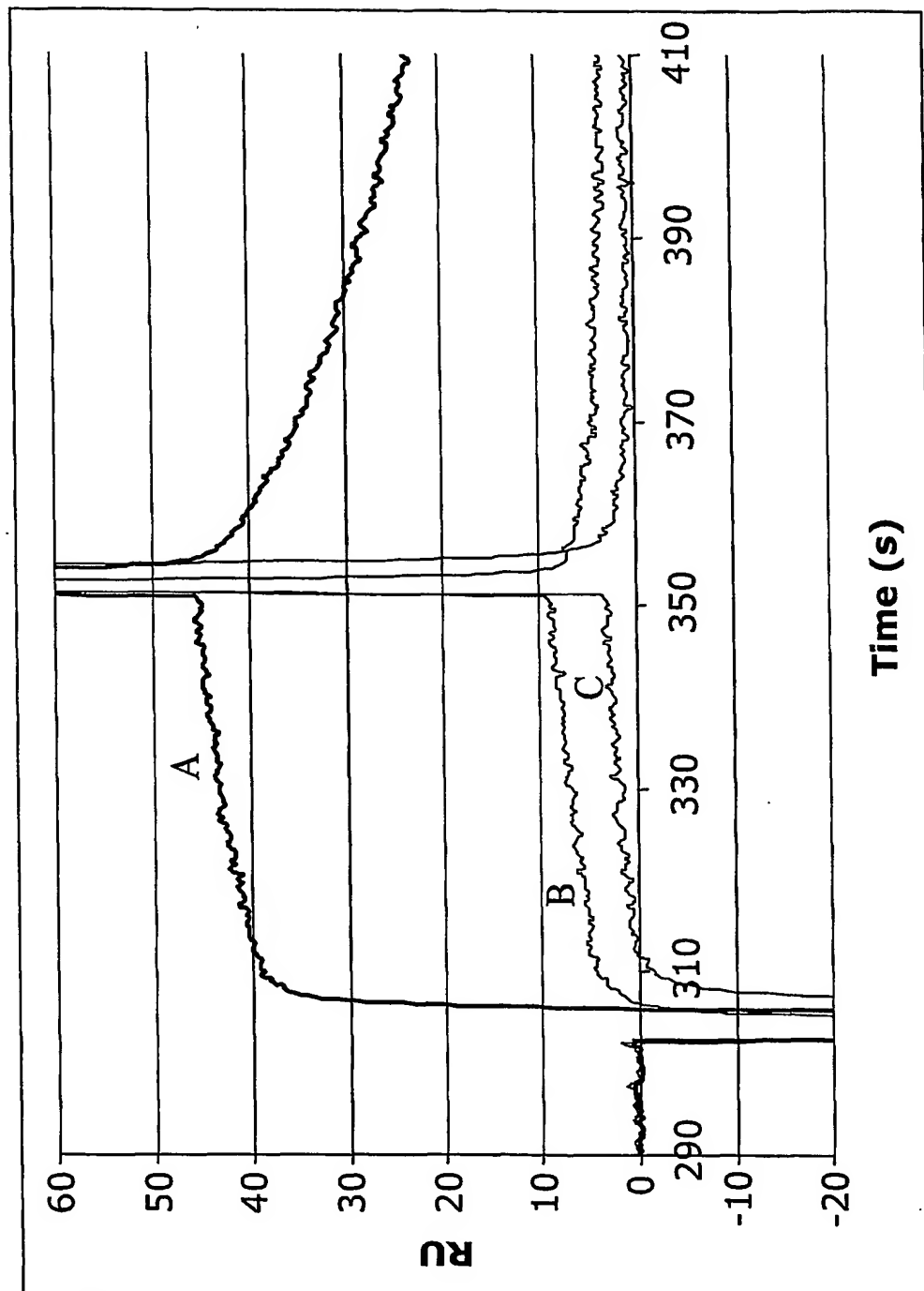


FIGURE 4

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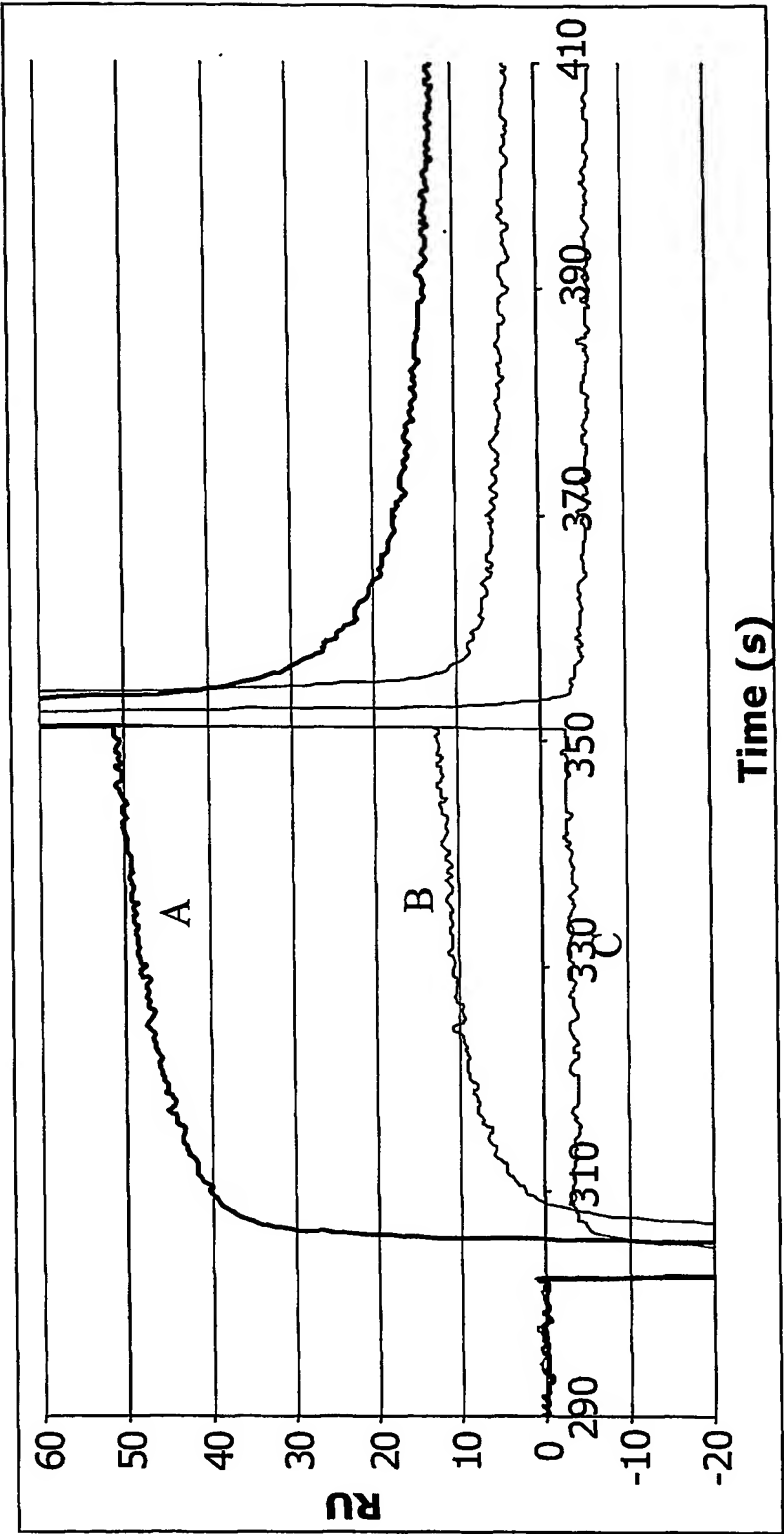


FIGURE 5

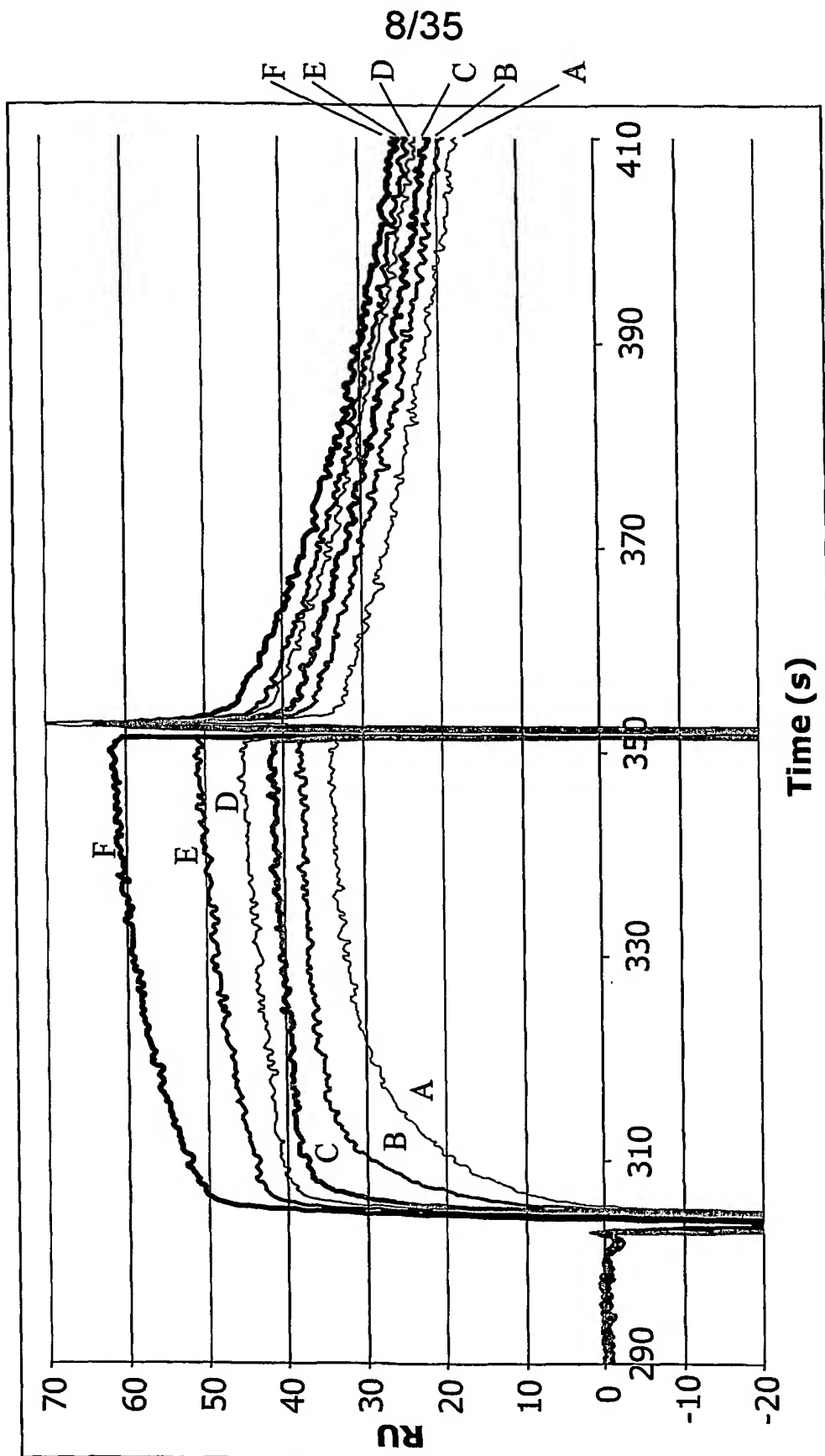


FIGURE 6

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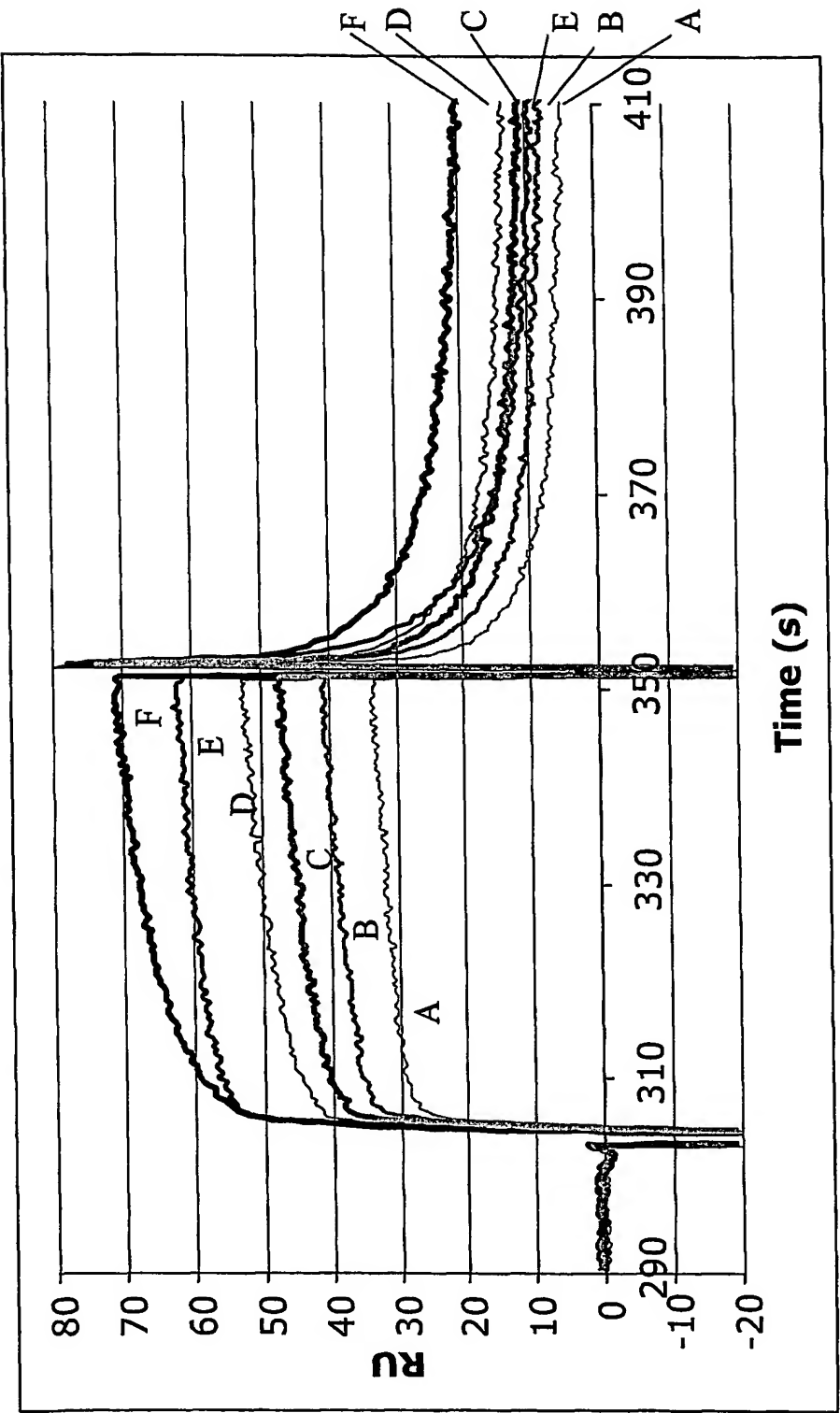


FIGURE 7

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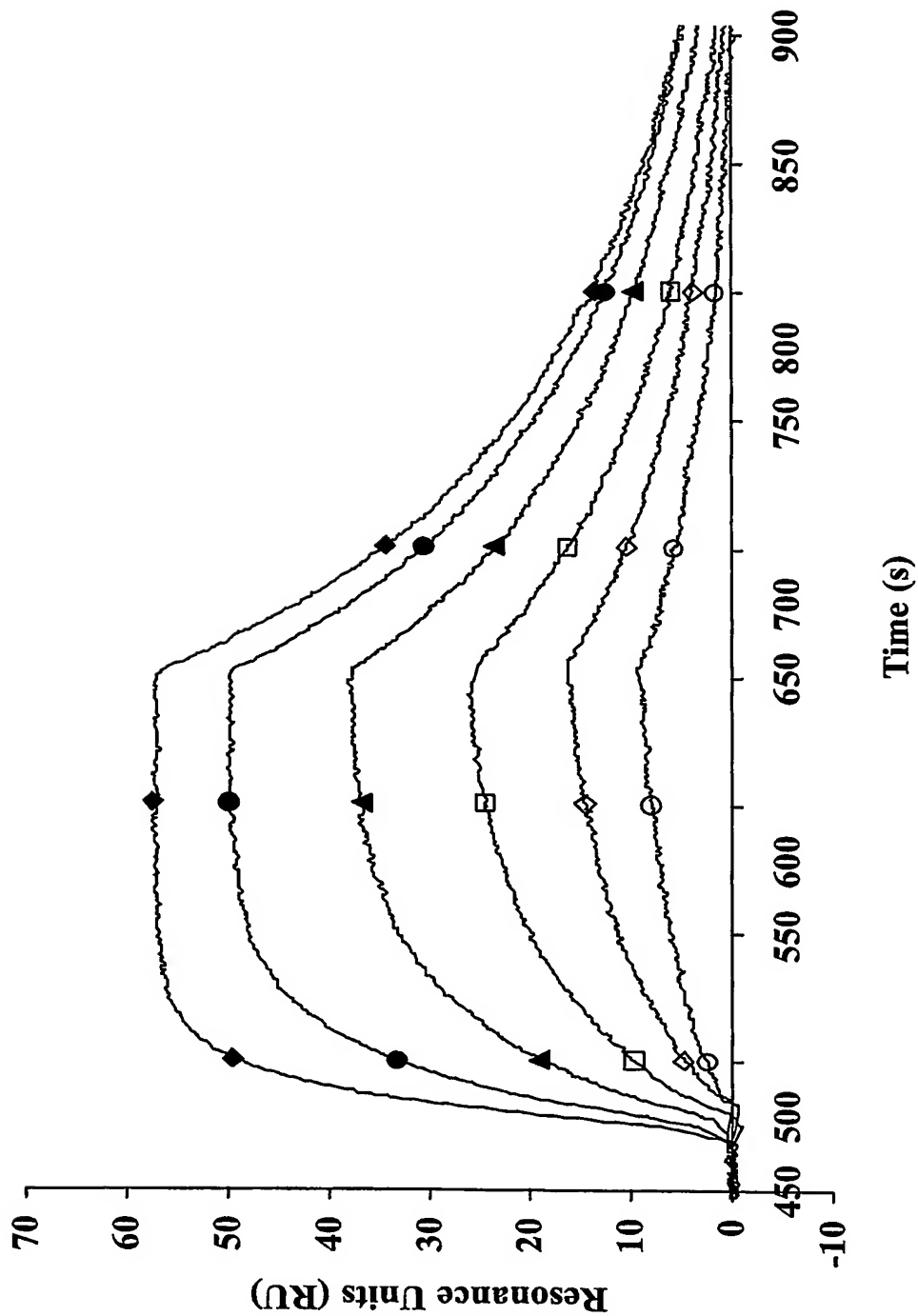
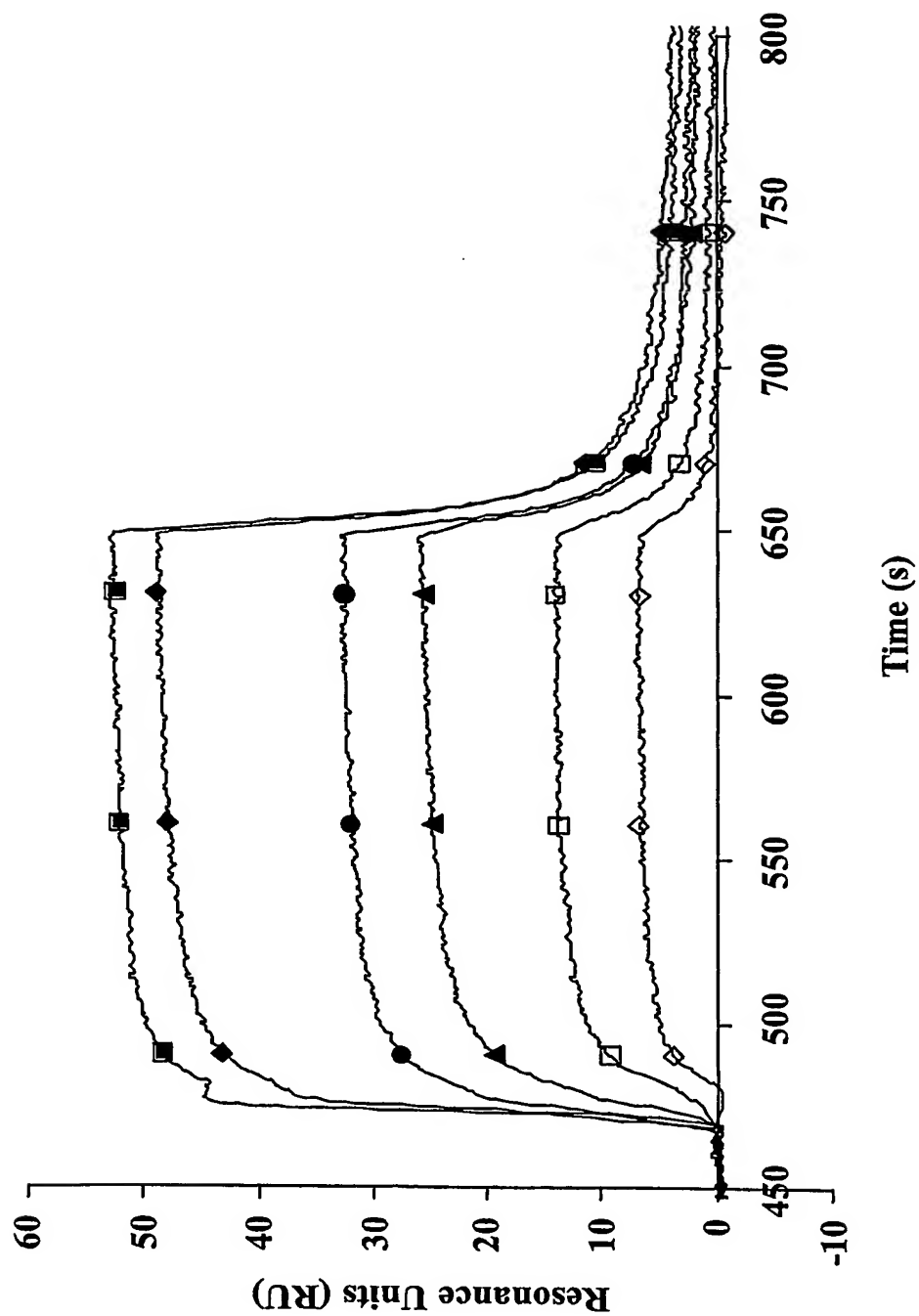
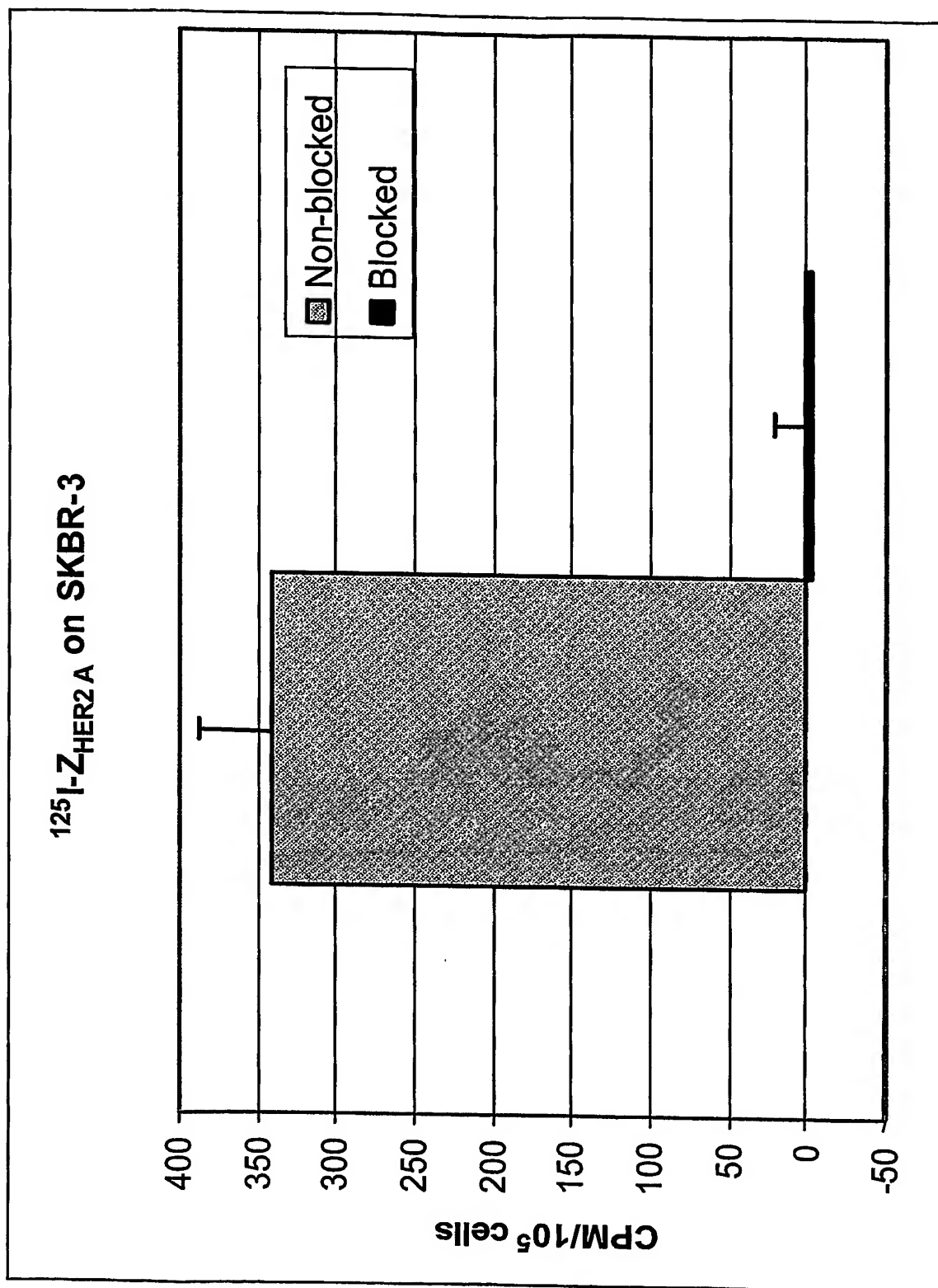


FIGURE 8A

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**FIGURE 8B**

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**FIGURE 9**

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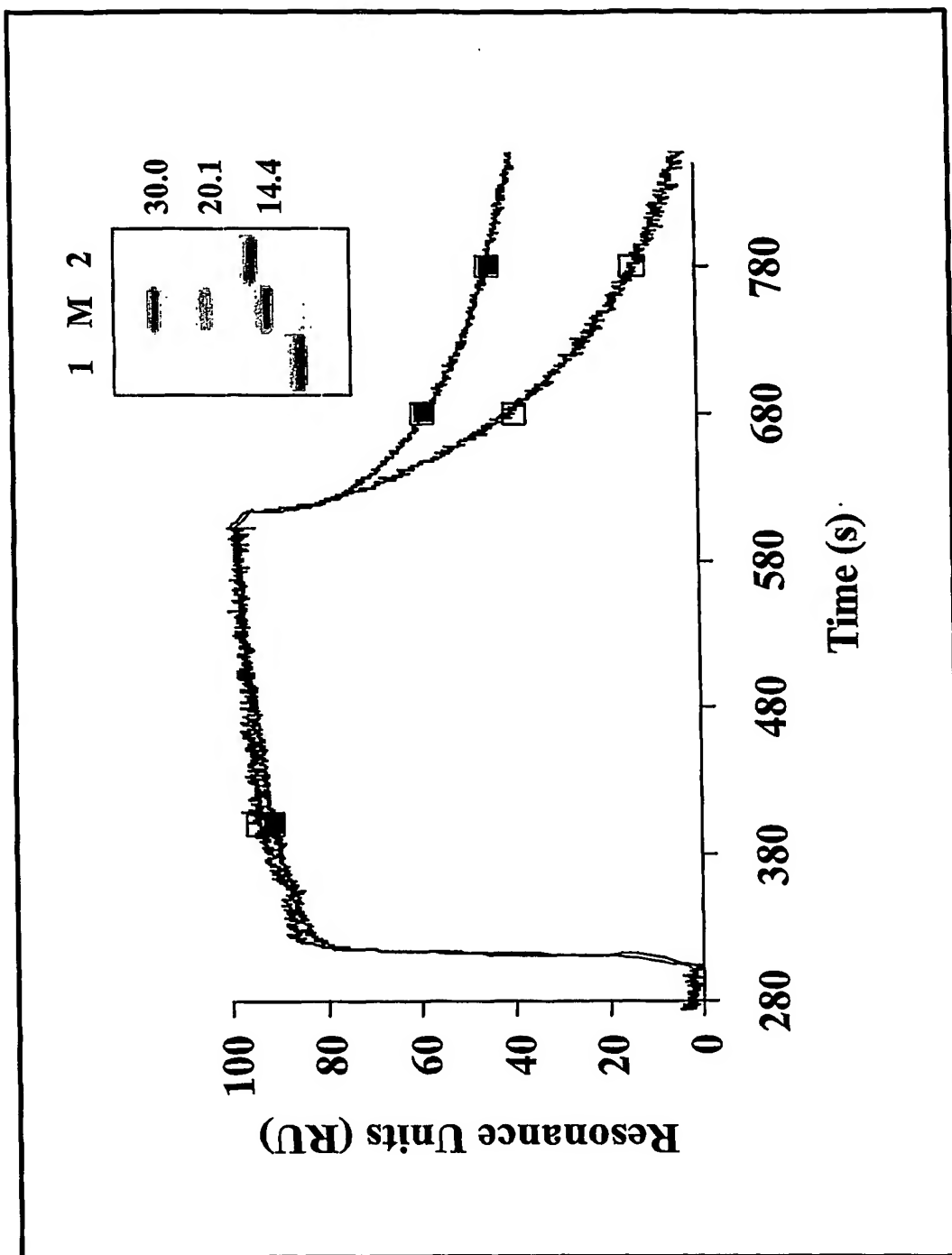


FIGURE 10

Blocked vs non-blocked

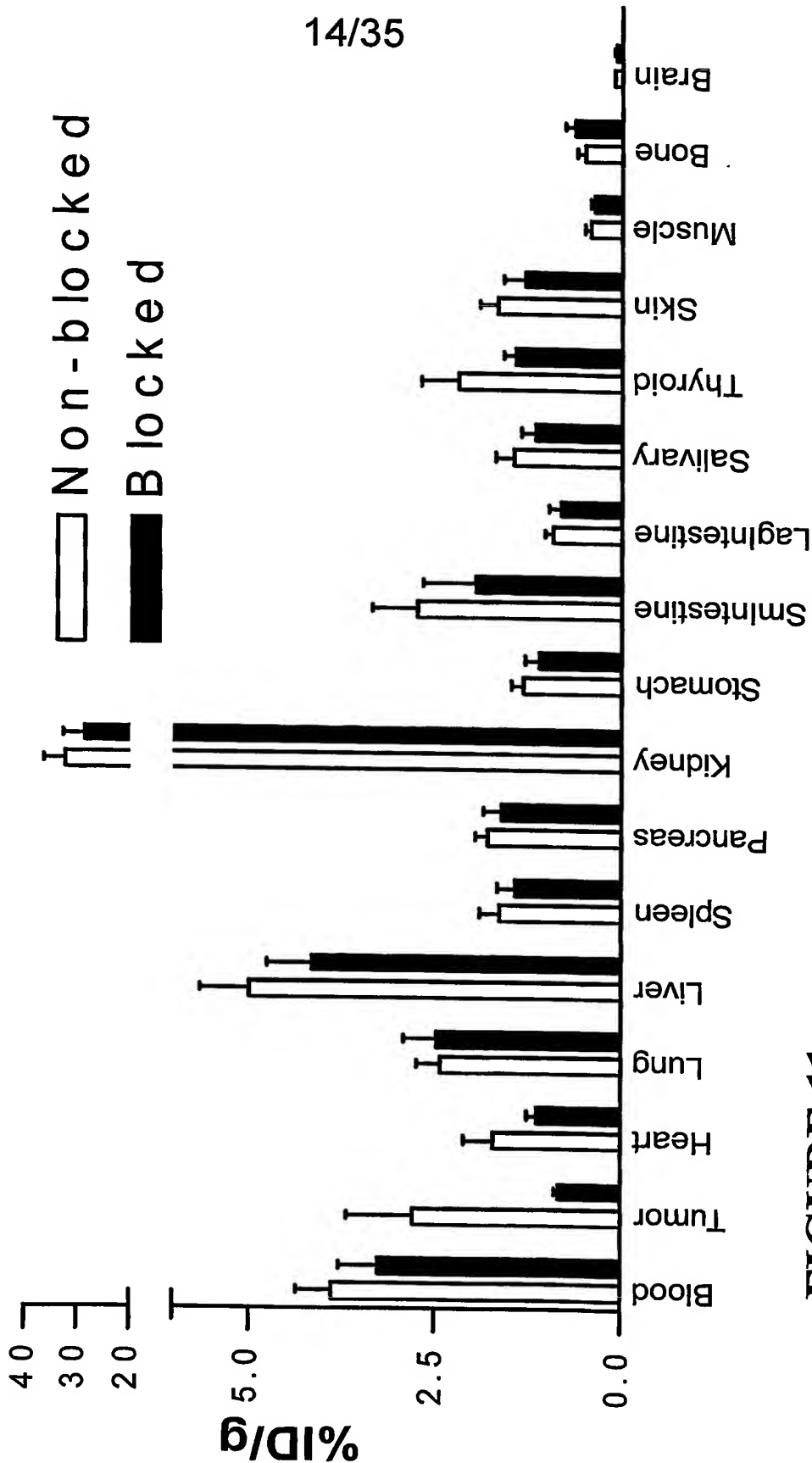


FIGURE 11

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Specific vs unspecific affibody

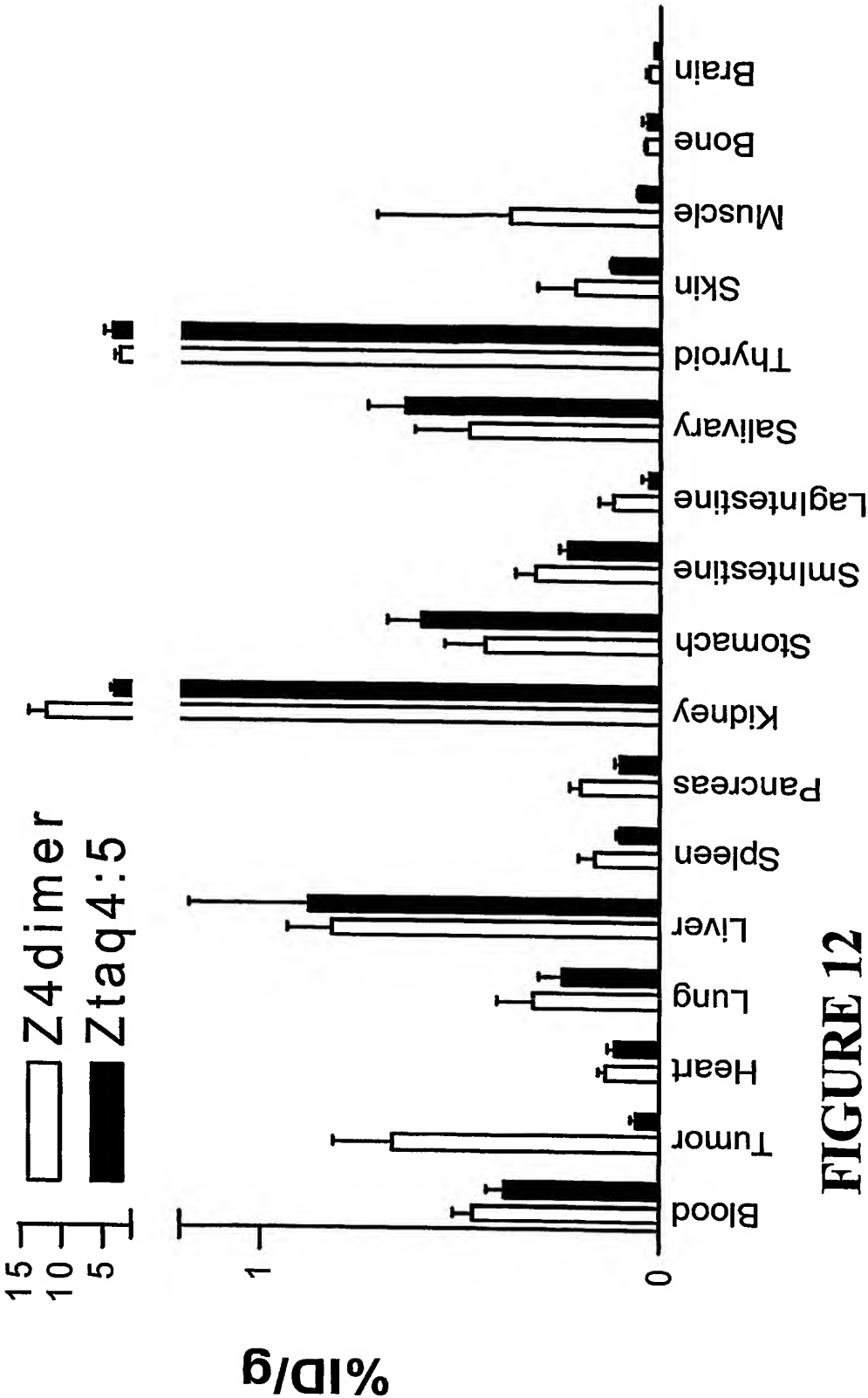


FIGURE 12

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Biodistribution, combined data

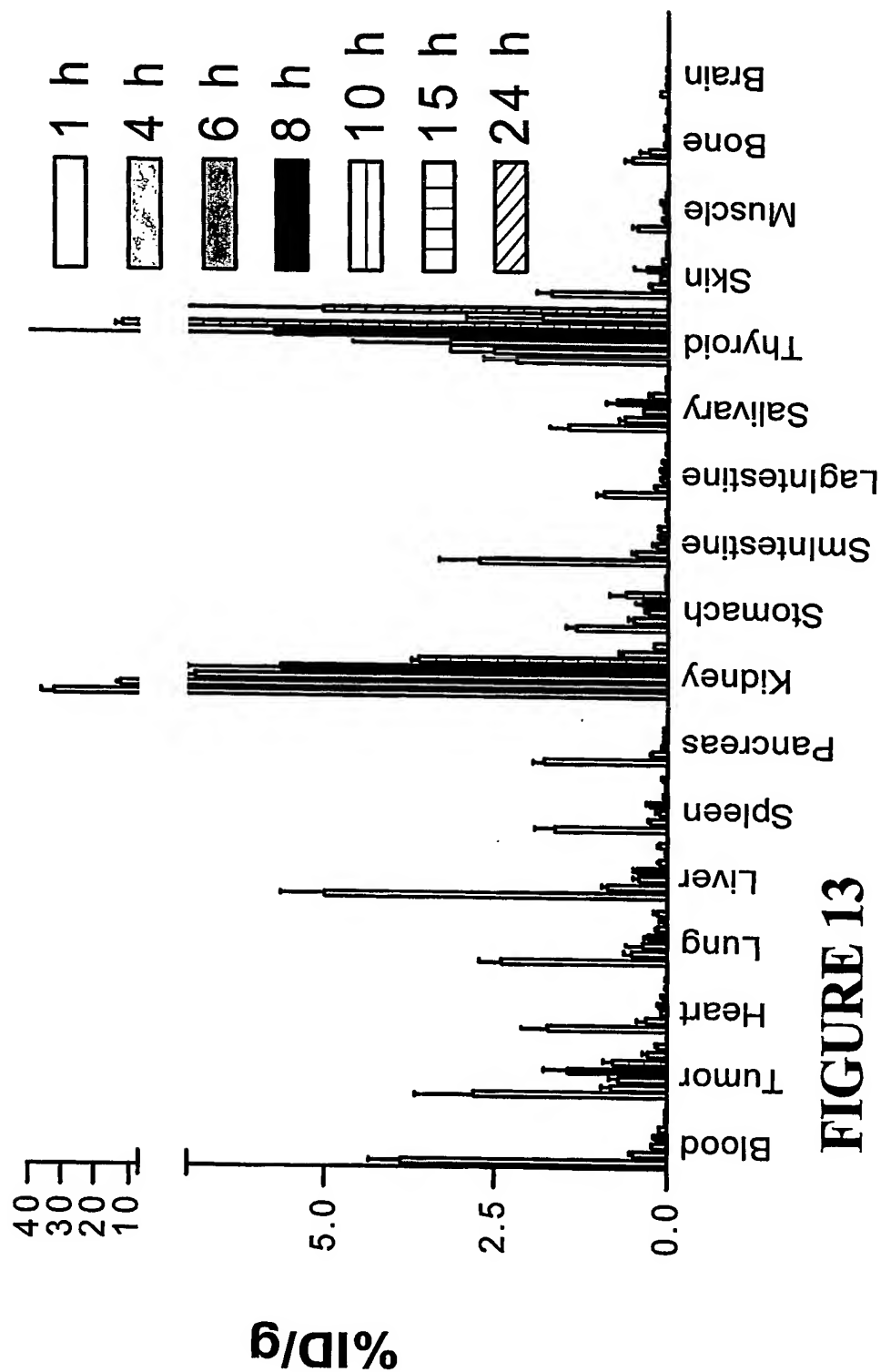


FIGURE 13

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Biodistribution at 8 h ip

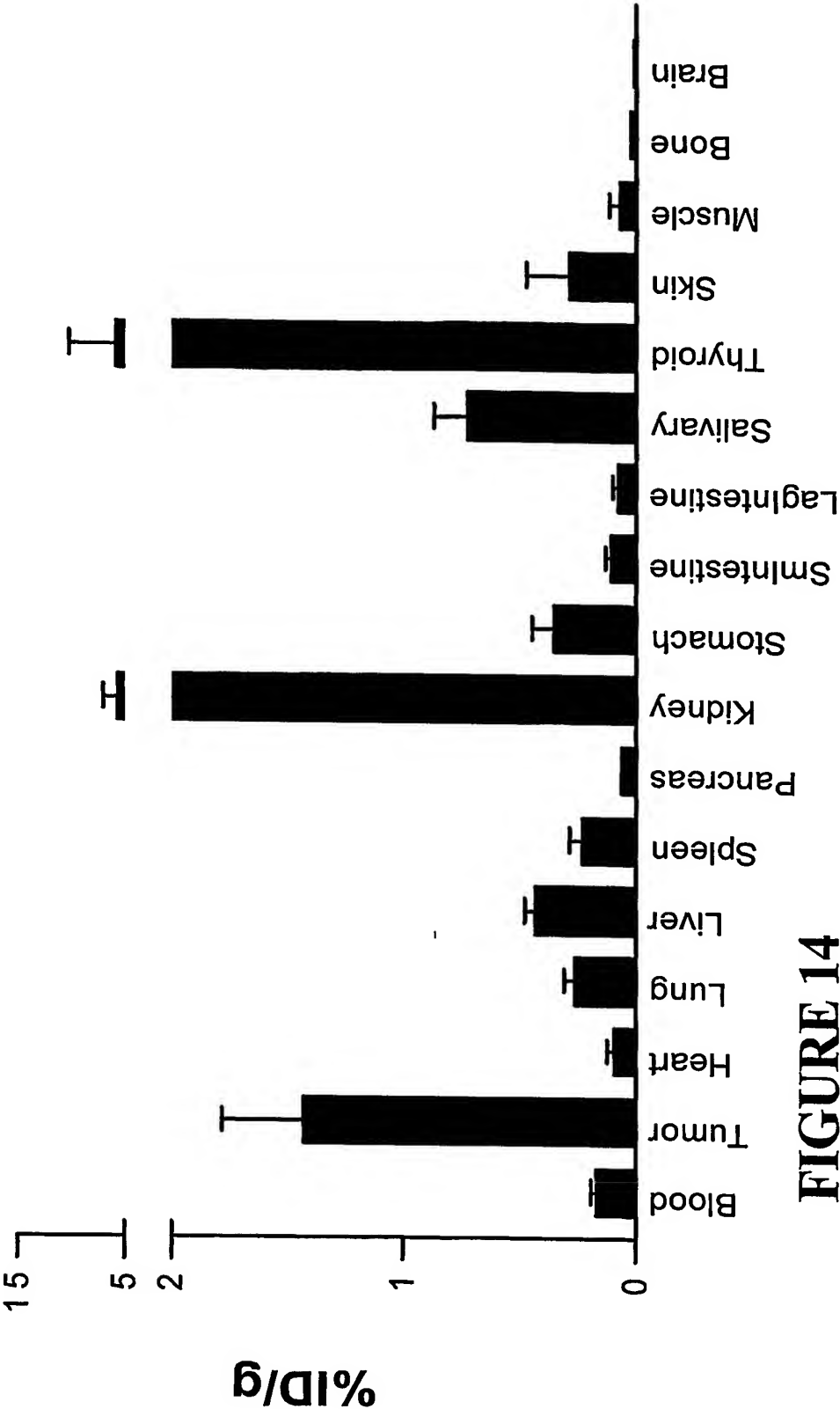


FIGURE 14

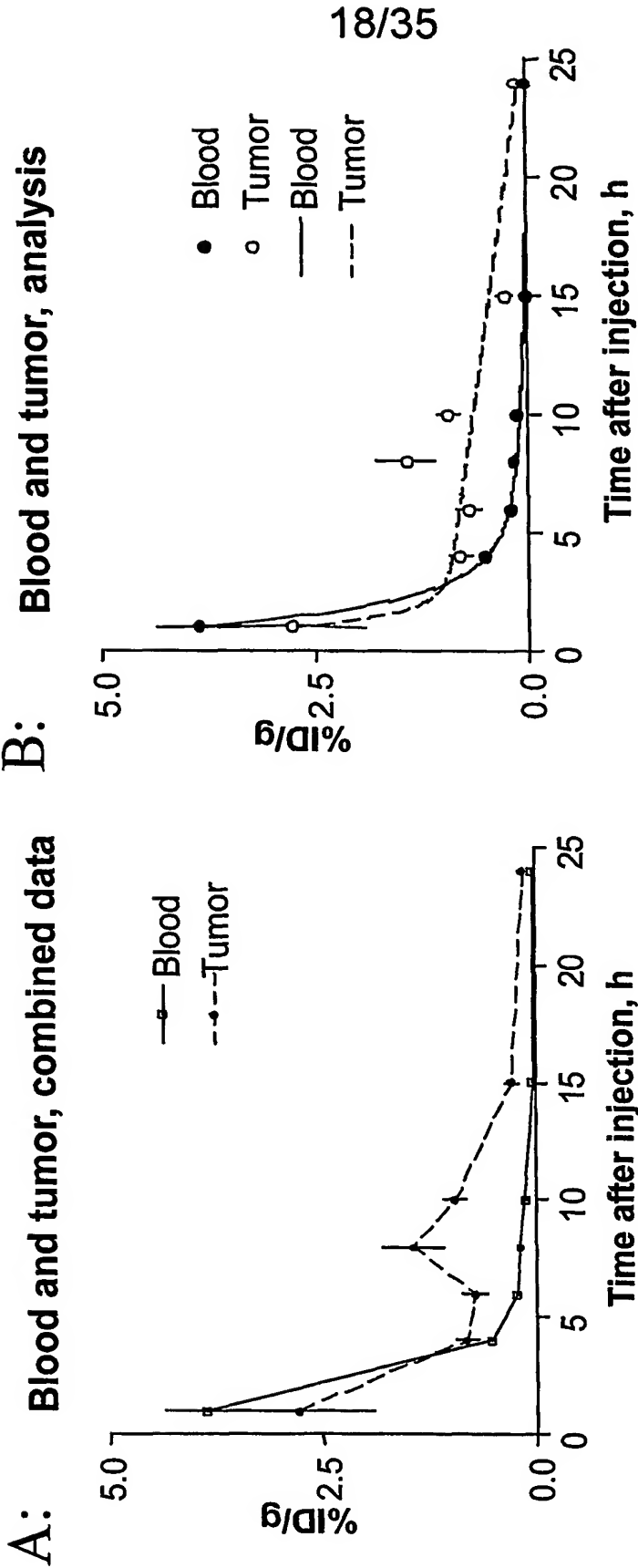


FIGURE 15

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Tumor to blood ratio, combined data

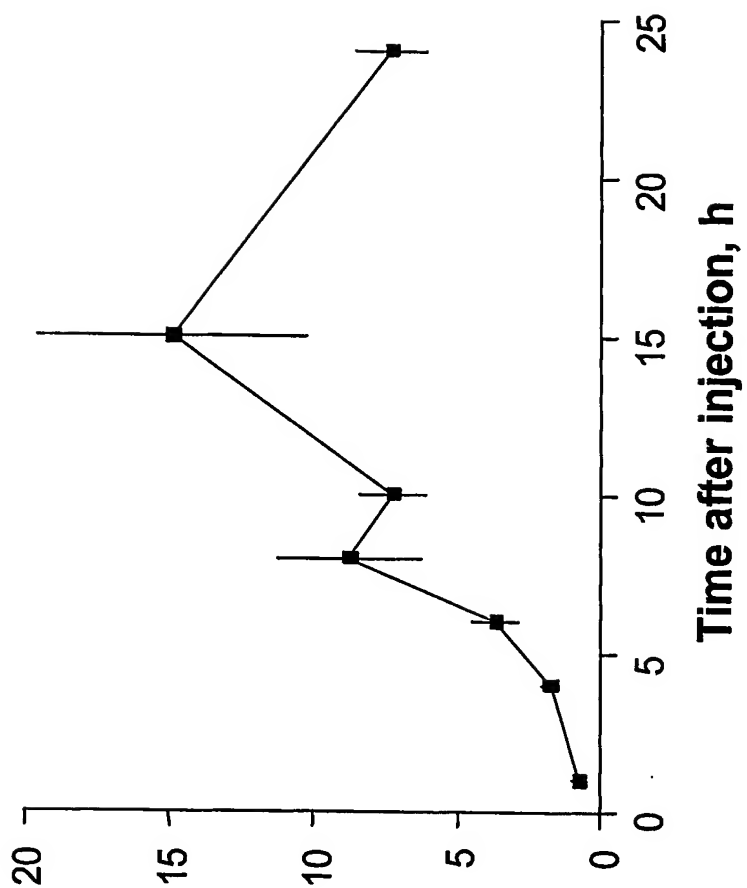


FIGURE 16

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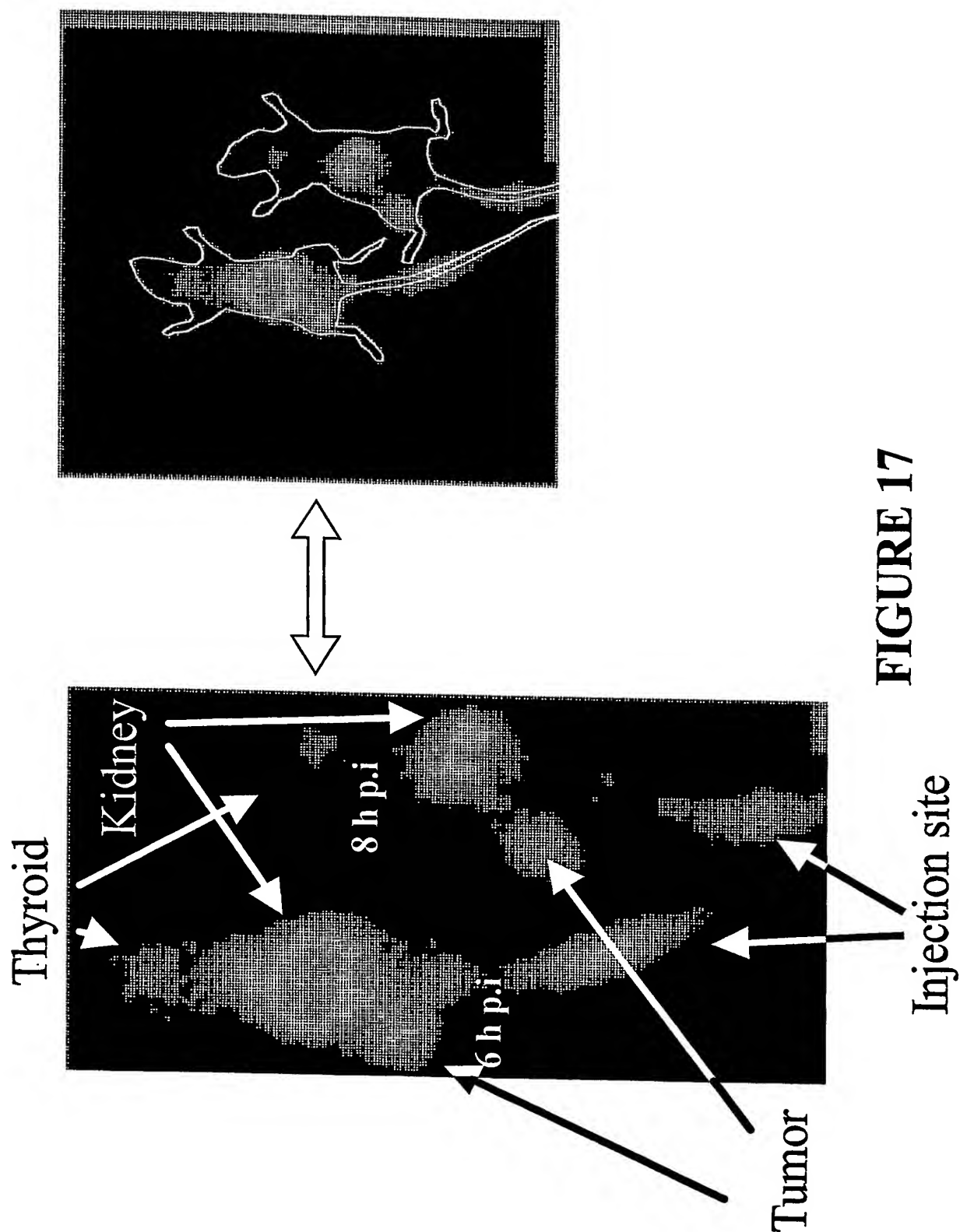


FIGURE 17

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Biodistribution of Z_{HER2 A}, 4 hours

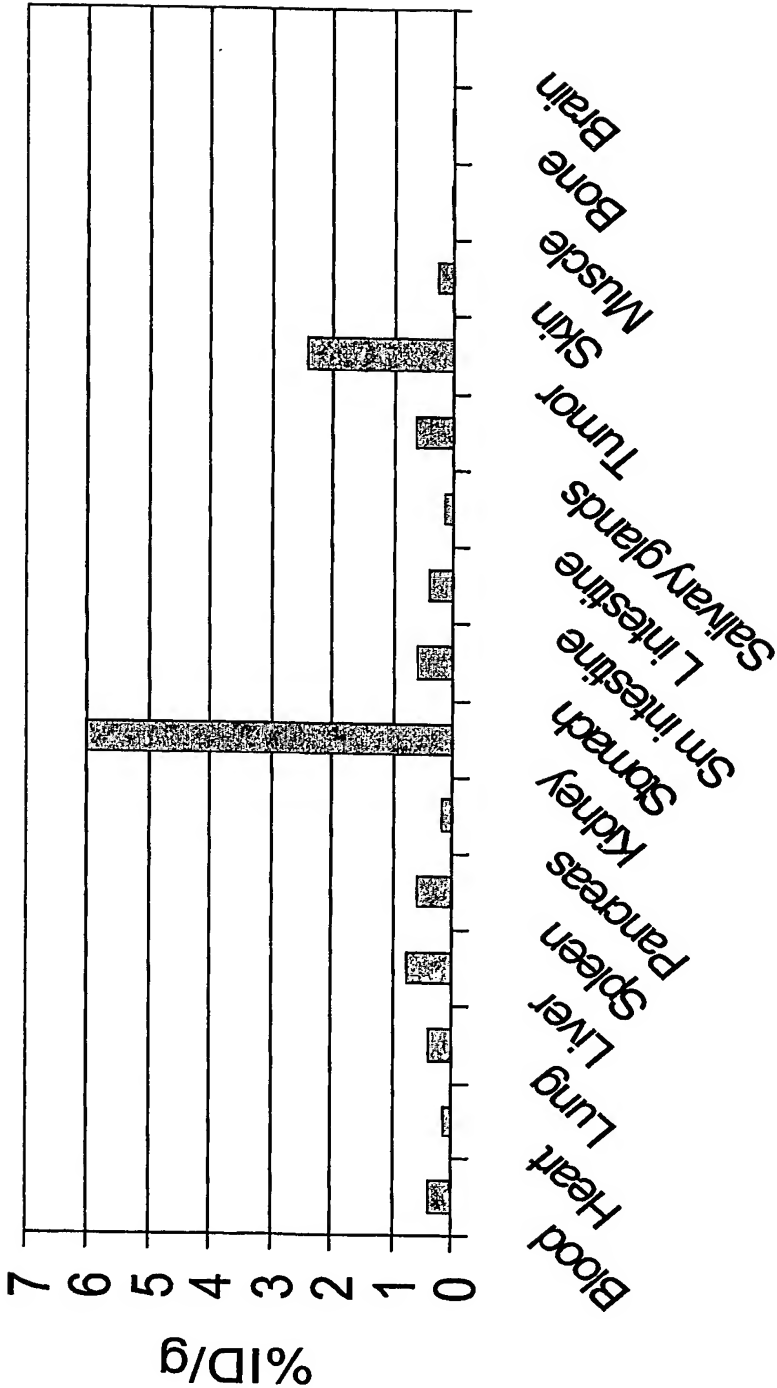


FIGURE 18

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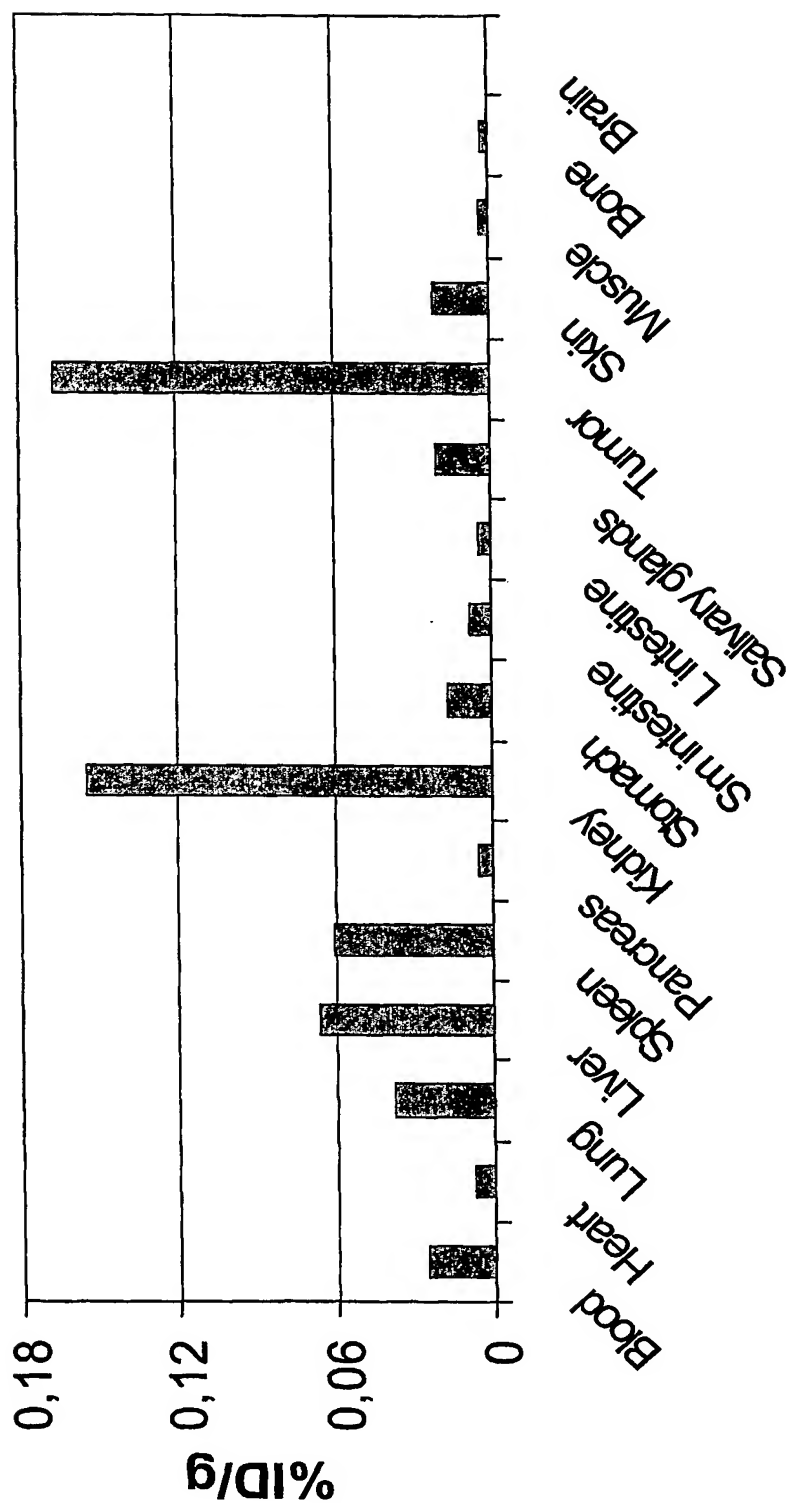
Biodistribution of Z_{HER2}A, 24 hours

FIGURE 19

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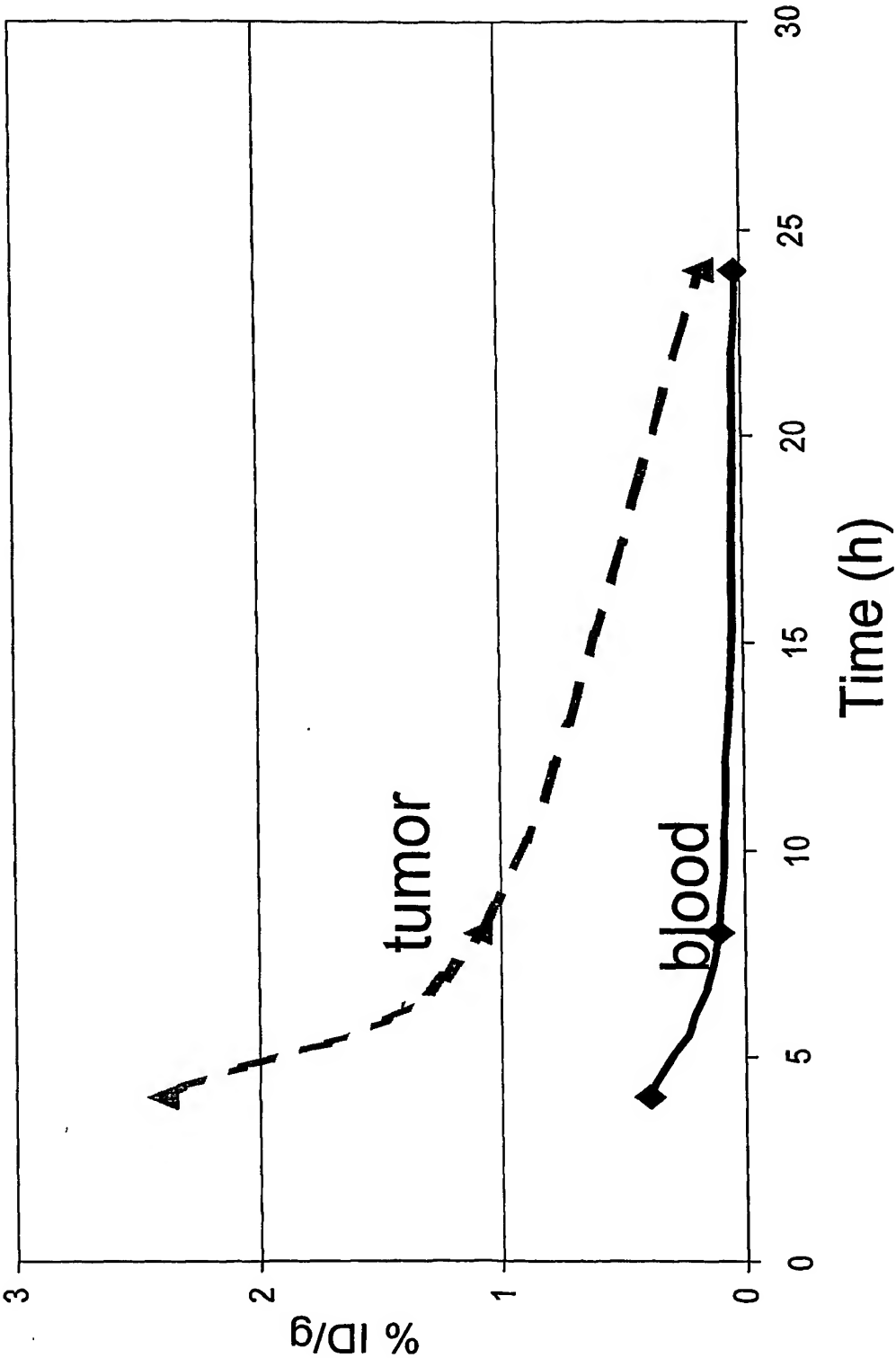


FIGURE 20

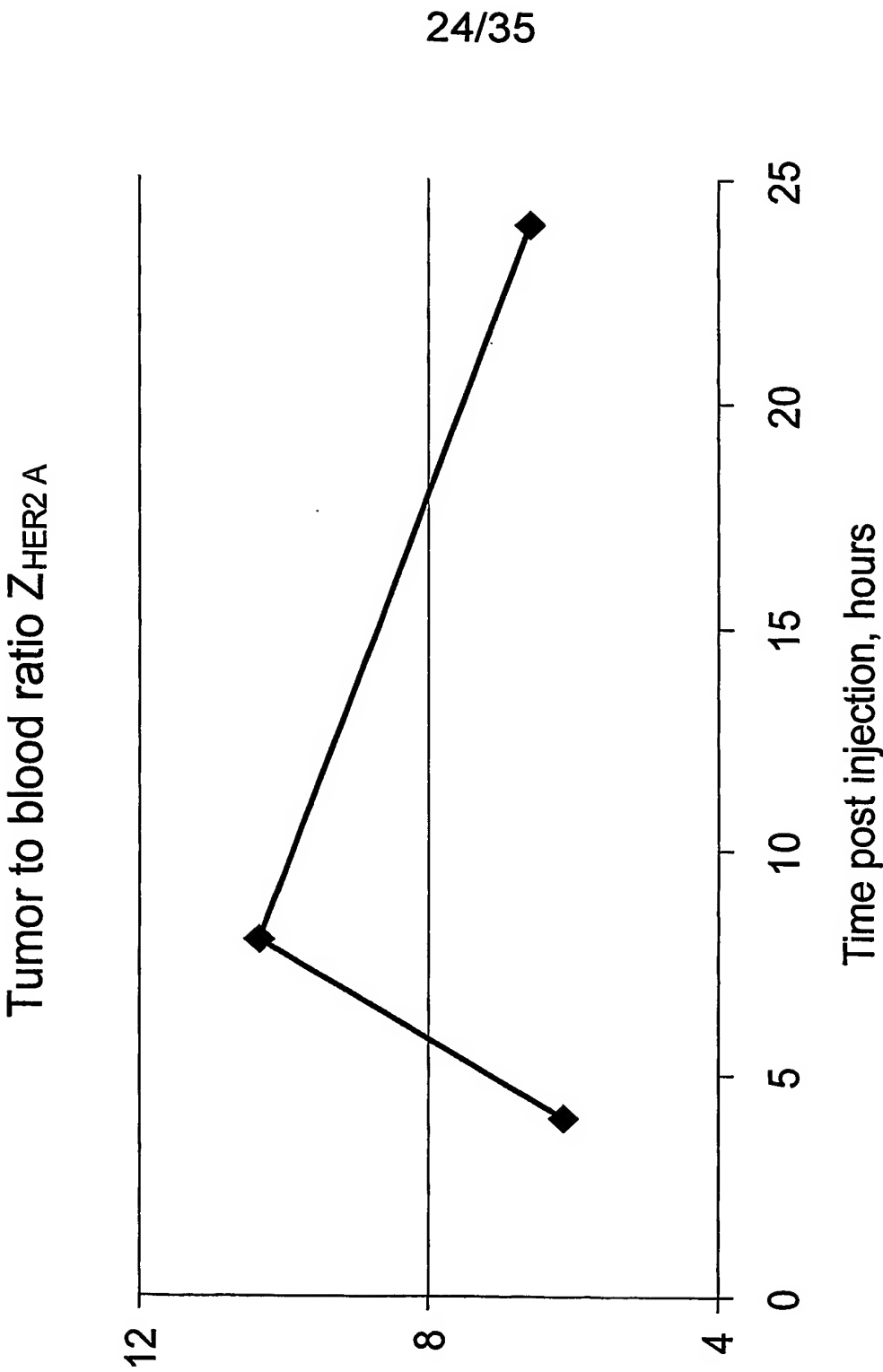


FIGURE 21

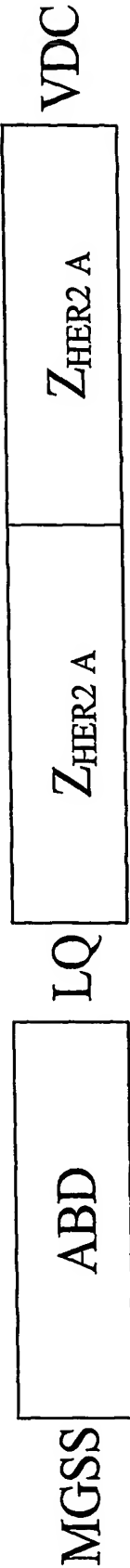


FIGURE 22

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Biodistribution ABD(Z_{HER2} A)₂, 12 and 24 hours

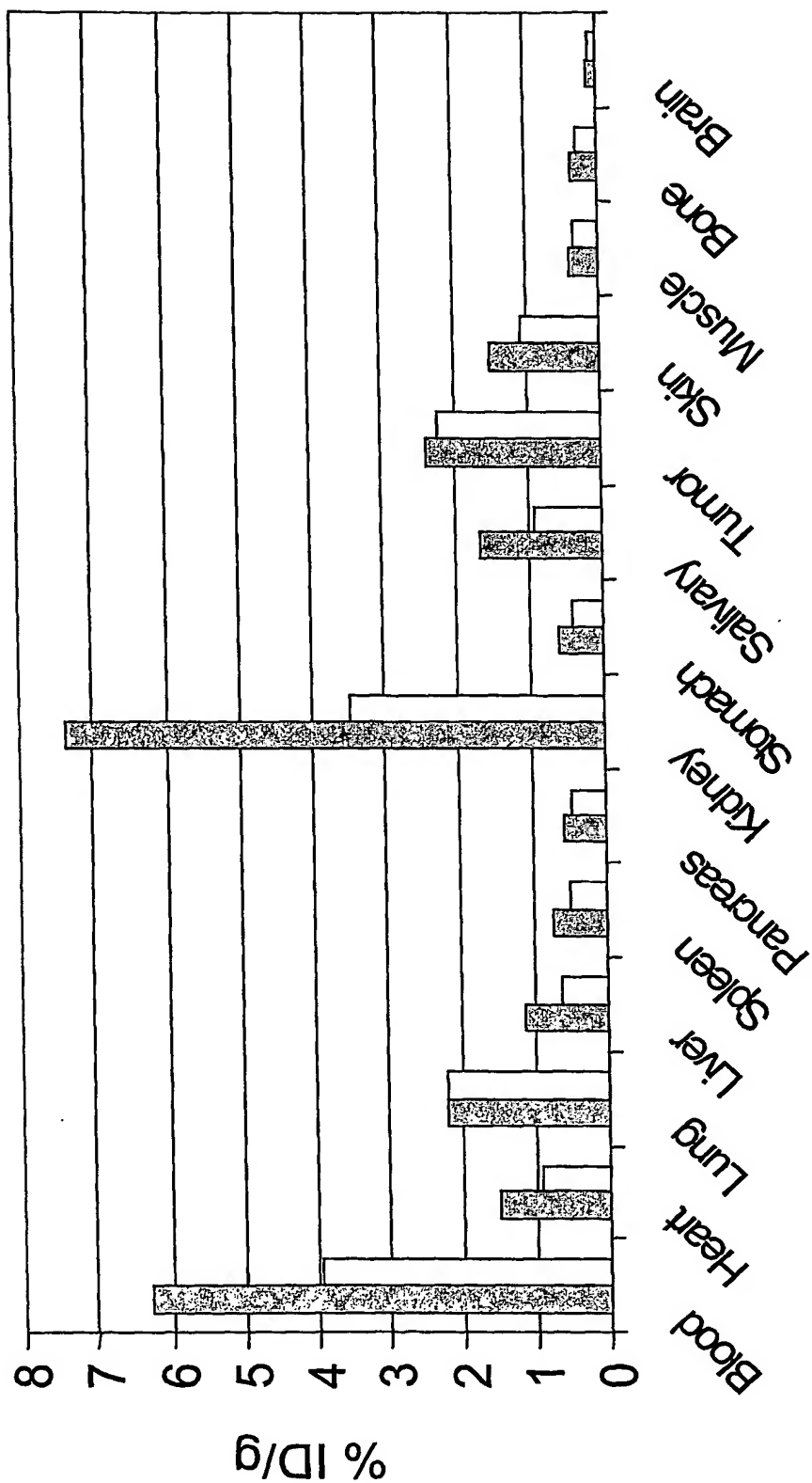


FIGURE 23

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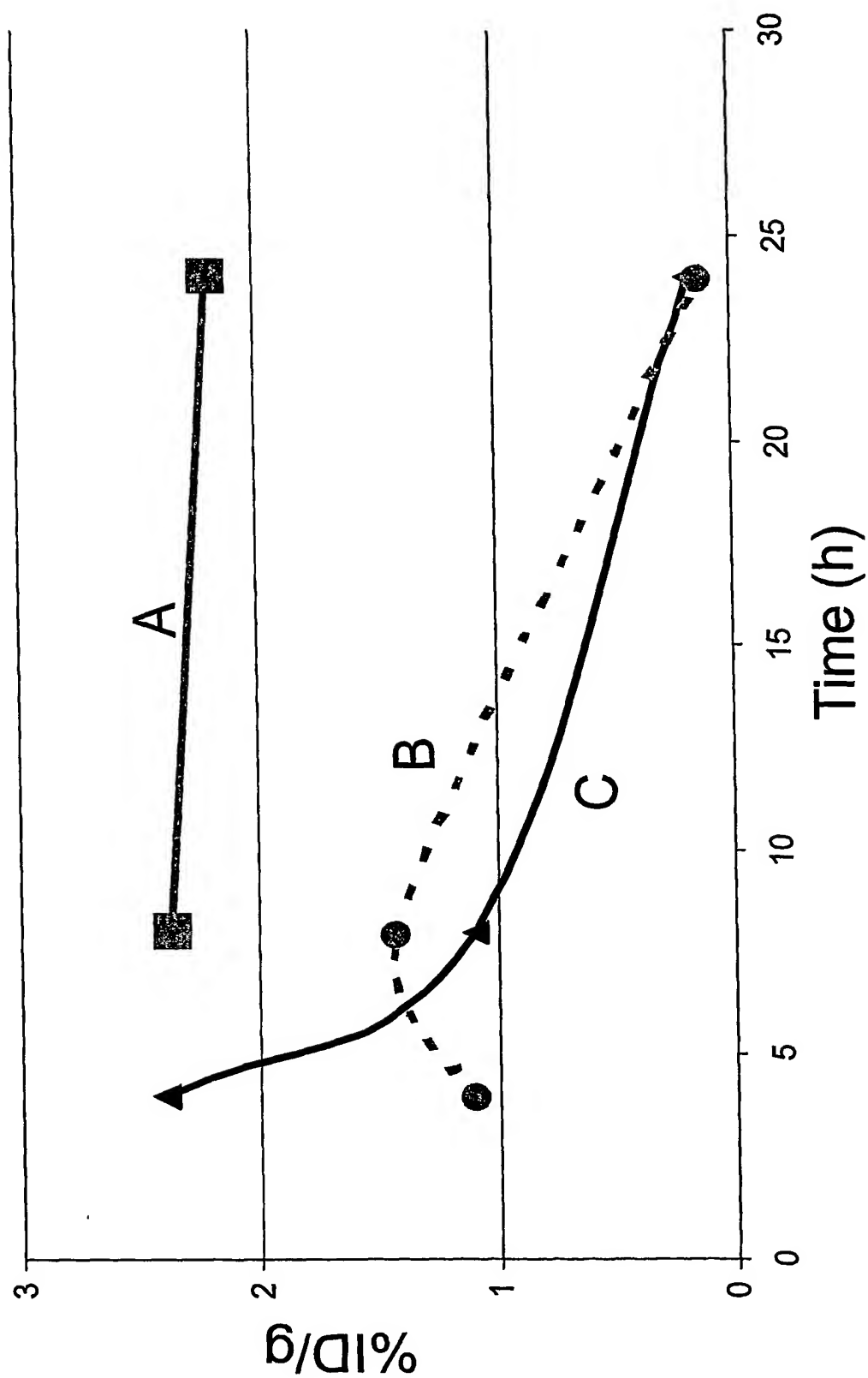
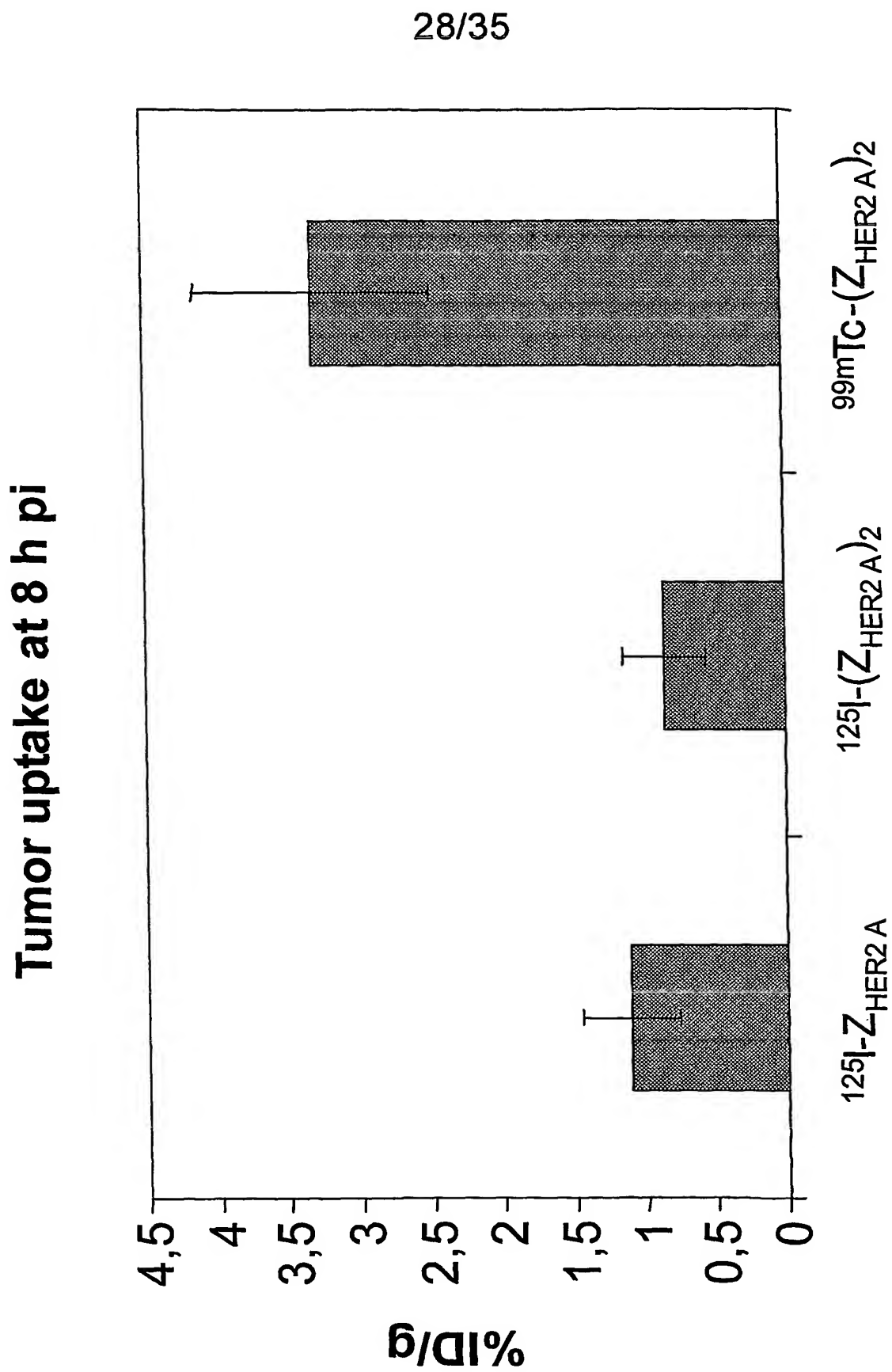


FIGURE 24

**FIGURE 25**

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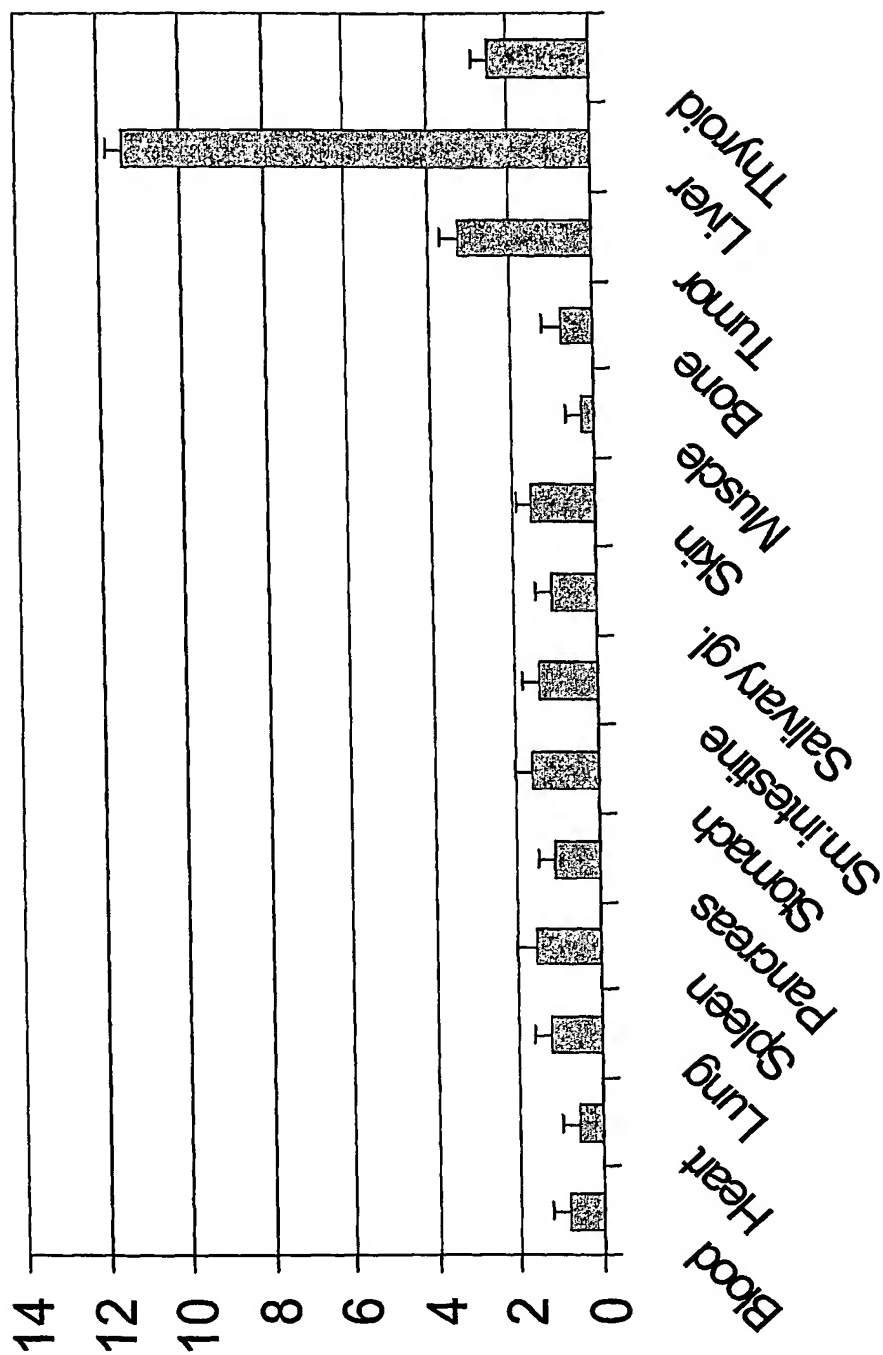
 $^{99m}\text{Tc}-(\text{Z}_{\text{HER2 A}})_2$, 8 hours

FIGURE 26

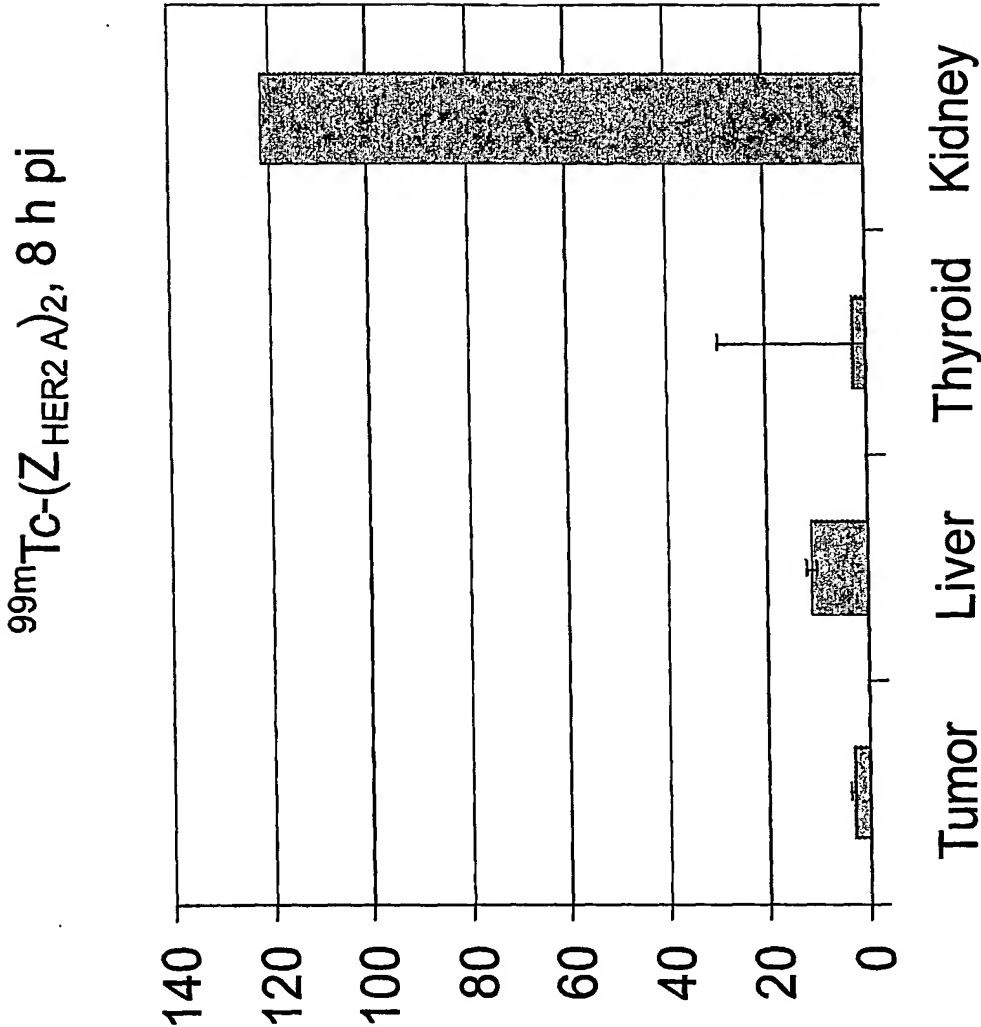


FIGURE 27

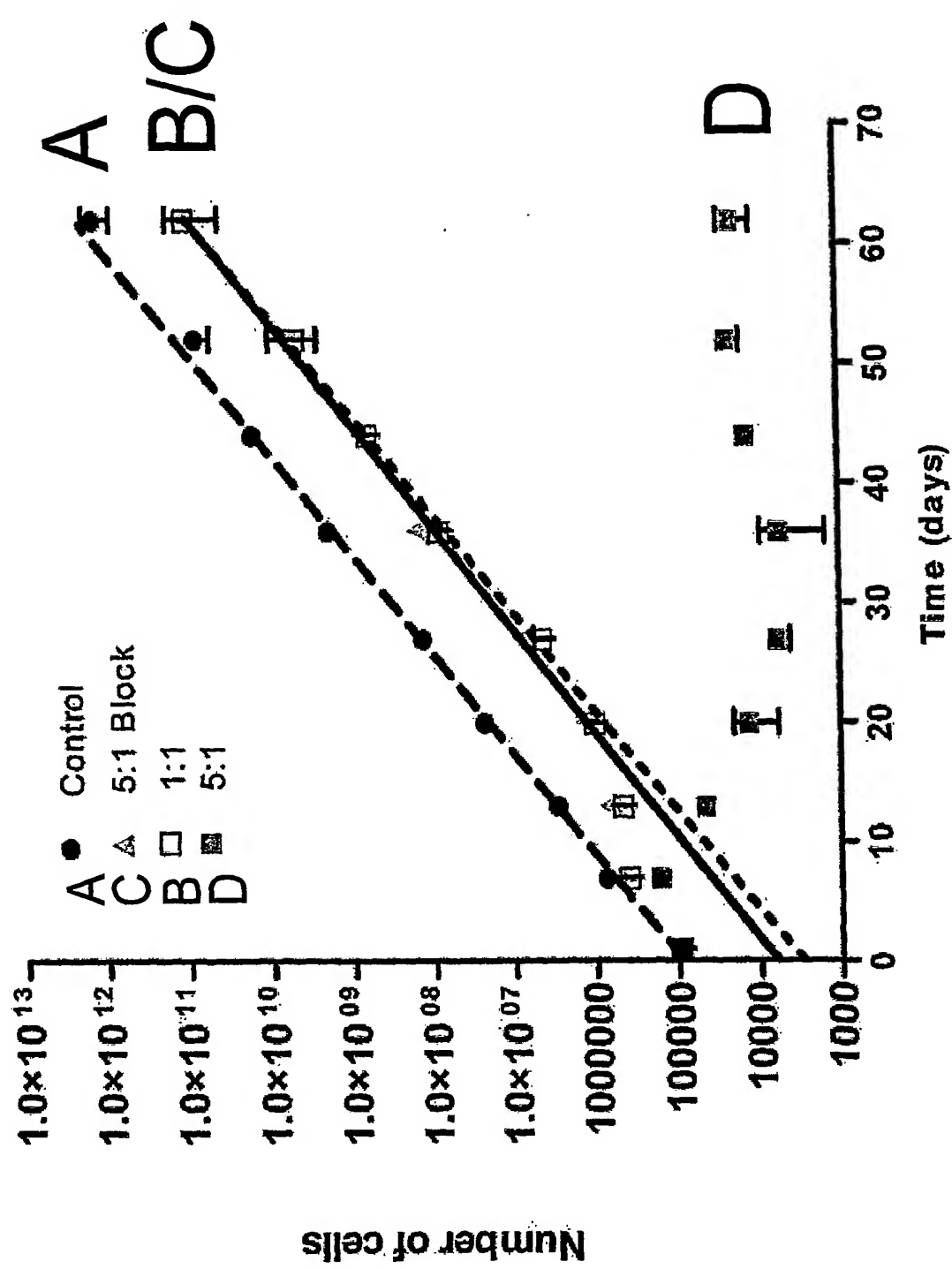


FIGURE 28

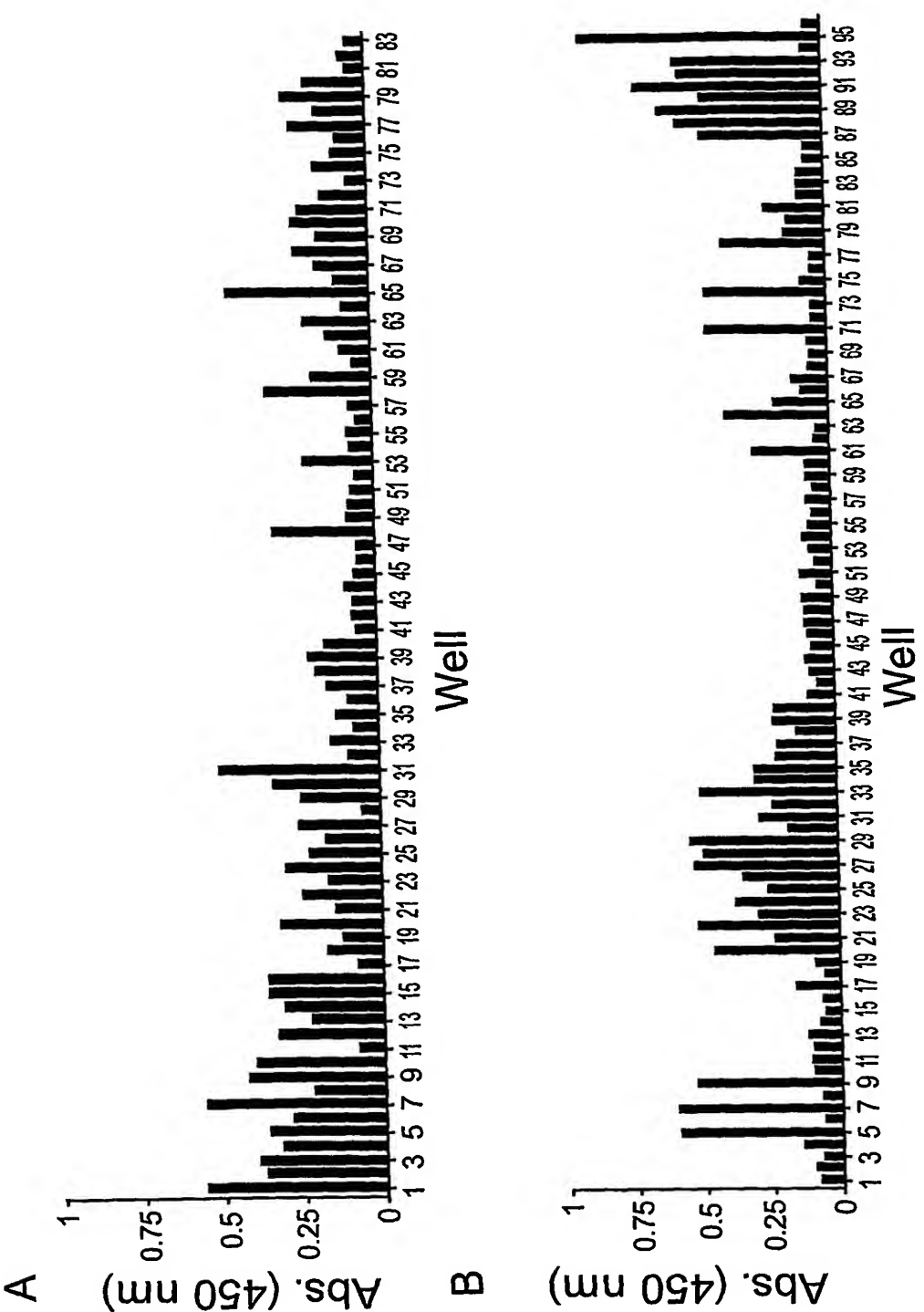
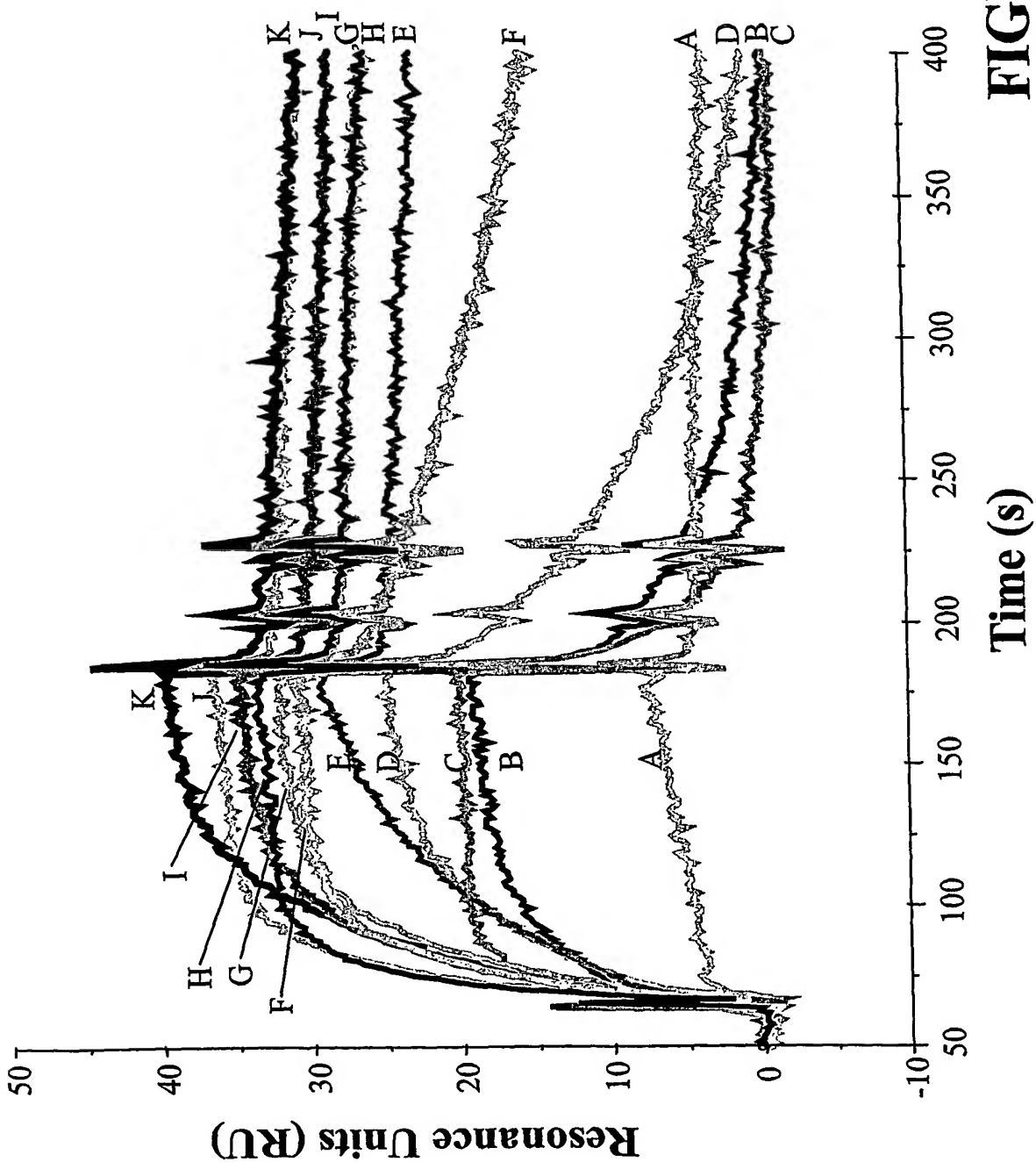


FIGURE 29

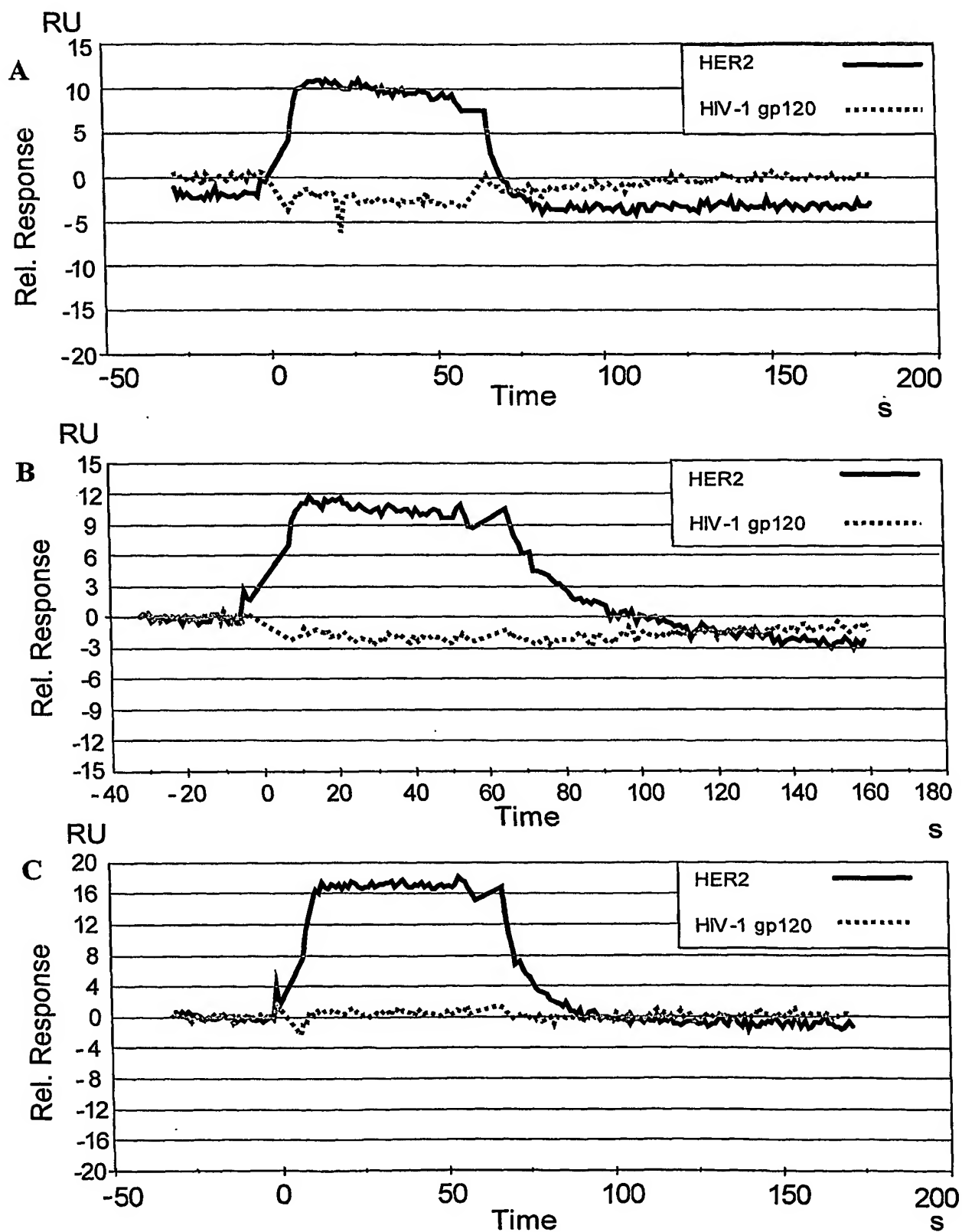


FIGURE 30

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**FIGURE 31**

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FIGURE 32

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